TECHNOLOGY DEPT.

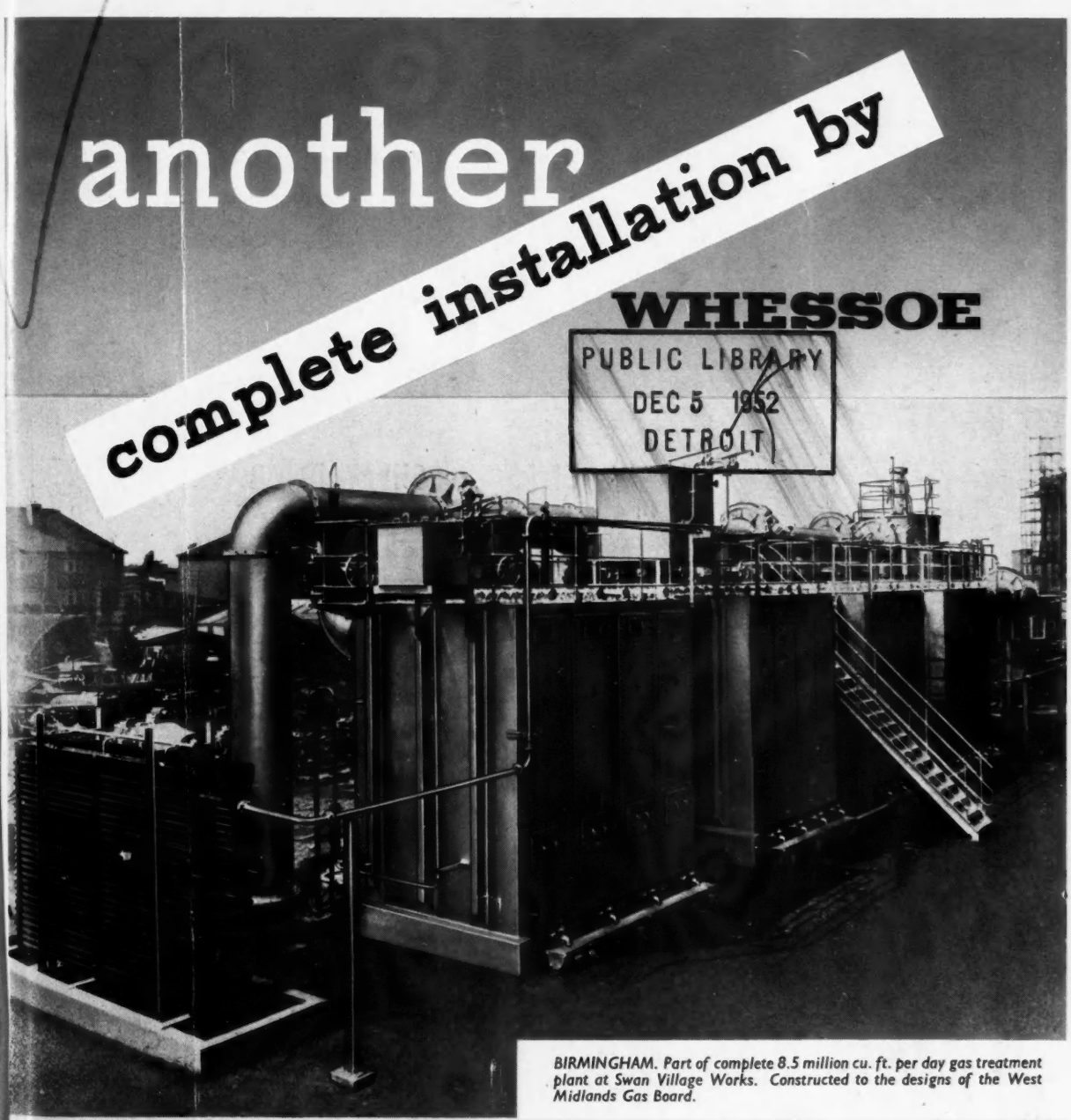
Gas Journal

Vol. 272. 104th Year. LONDON, NOVEMBER 19, 1952. No. 4668. Price 1/3

Registered as a Newspaper

another complete installation by WHESSOE

PUBLIC LIBRARY
DEC 5 1952
DETROIT



BIRMINGHAM. Part of complete 8.5 million cu. ft. per day gas treatment plant at Swan Village Works. Constructed to the designs of the West Midlands Gas Board.

WHESSOE LIMITED
DARLINGTON & LONDON

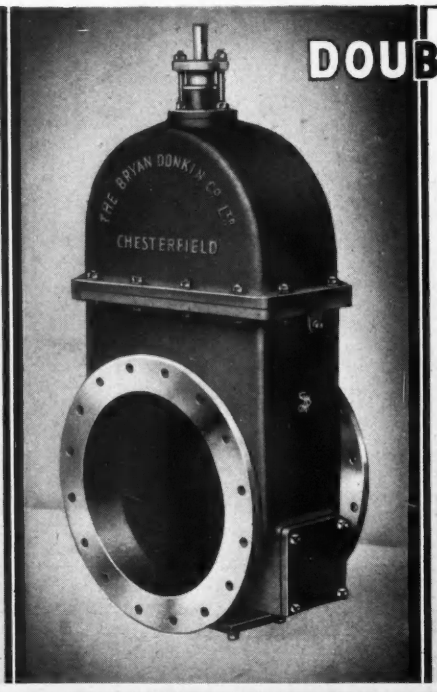
PLAN *for* EFFICIENCY

Conveyors and Mechanical Handling Plant cut time and labour costs, thereby providing the extra impetus needed for increased productivity. There is no problem in this field to which we cannot supply the answer.

WITH THOMPSON CONVEYORS

JOHN THOMPSON CONVEYOR CO.

'Grams: Boiler Wolverhampton ETTINGSHALL - WOLVERHAMPTON 'Phone: BILSTON 4112 C 11



DOUBLE-FACED GAS VALVES

"HICKS" TYPE WITH INTERNAL SCREW

UP TO 24" - 10 lbs. per sq. in.
OVER 24" - 5 lbs. per sq. in.

THIS VALVE has the following special advantages:—

Access to all working parts for cleaning while valve is under pressure.
The valve is of the parallel slide type and cannot jam.
The faces are cleaned each time the valve is opened or closed.
The faces and spindles can be lubricated whilst in position, through points provided.
Made in sizes from 6-in. to 48-in.
Vertical or horizontal type.
These valves can also be supplied with external screw if required.

BVA BRITISH VALVE MANUFACTURERS ASSOCIATION

The BRYAN DONKIN CO LTD · Chesterfield

LONDON MANCHESTER MEMBERS OF THE SOCIETY OF BRITISH GAS INDUSTRIES

THE CHEMISTRY OF GAS MANUFACTURE DEMANDS ACCURATE MEASUREMENT OF GAS VOLUMES

WRIGHT'S

Laboratory Gas Meters are of guaranteed high accuracy

Illustrated: new design cast-iron cased meter 0.1 cu. ft./rev., with index and levelling platform. Also available in vitreous-enamelled cast-iron case with chromium plated fittings—the fine appearance of this 'VN' meter makes it a fitting item of essential equipment in the most up-to-date gas testing laboratory.

ALEXANDER WRIGHT & CO. LTD.

1, Westminster Palace Gardens, Artillery Row, Victoria St.,
'Phone: ABBEY 2207 WESTMINSTER, S.W.1.

GEORGE GLOVERS

Ranelagh

PREPAYMENT METERS

Dependable Year-in Year-out

Product of Radiation Ltd

RANELAGH WORKS
122, KINGS ROAD.

GAS METERS

CHELSEA S.W.3.

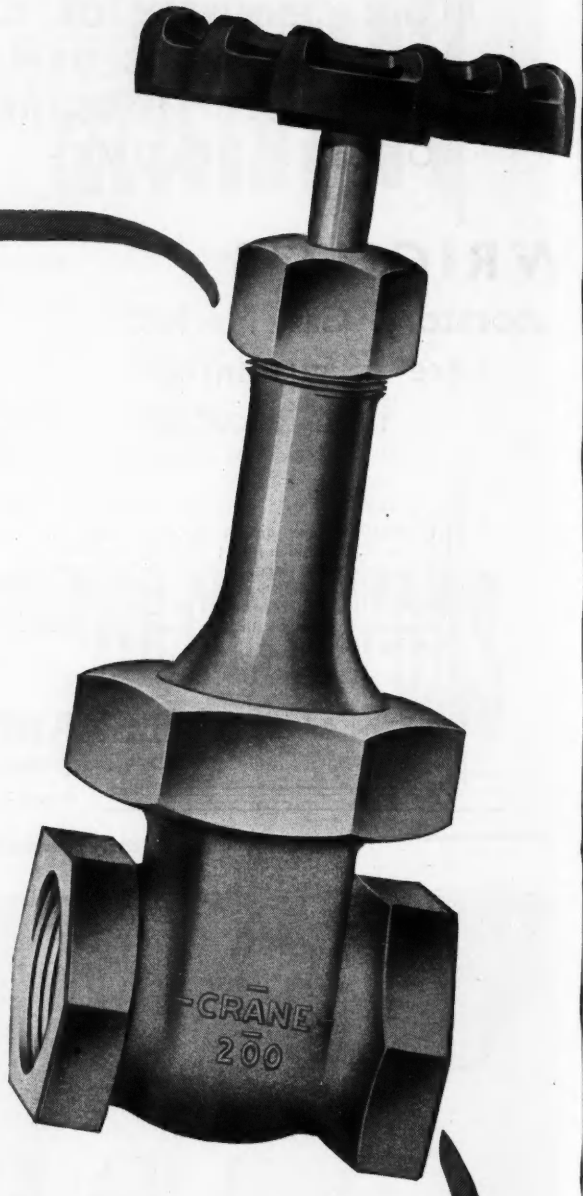
GEORGE GLOVER & CO., LTD.

NEWCOMER

THE D180 GUN METAL GATE VALVE

Industry, ever on its toes to speed up output, demands valves which require minimum attention during service. Crane, equally up-to-the-minute, announce their new D180 Valve which, with its nickel alloy disc, particularly meets the latest requirements. Write for new Valve catalogue.

D180 Gun Metal Gate Valve, union bonnet construction, rising stem, suitable for saturated steam working pressures up to 200 lbs., 500°F., sizes ¼" to 3", screwed ends. This valve has a Crane Nickel Alloy disc; the body seat rings are integral with the body. A feature of the bonnet construction is that the union ring nut provides a strong tight joint; it can be easily dismantled and reassembled without danger of injuring the valve.



CRANE VALVES

FOR STEAM, WATER, OIL AND AIR

MF 19

CRANE LTD., 45-51 LEMAN STREET, LONDON, E.1. WORKS: IPSWICH

BRANCHES: BIRMINGHAM, BRENTFORD, BRISTOL, GLASGOW, MANCHESTER

50 TONS CLEAN COKE PER HOUR

WITH AN ACE COKE DE-BREEZING SCREEN

Standard unit incorporating weighing and bagging equipment gives 20/25 TONS clean coke weighed and bagged within the hour.

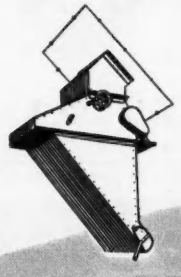
All types of MOBILE DE-BREEZERS complete with skip hoist.

Standard unit arranged for BULK LOADING gives 50 tons of clean coke per hour.

Running costs—only 5/8 OF ONE H.P.

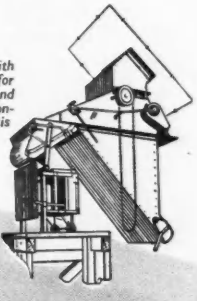
All units can be applied to EXISTING BUNKERS

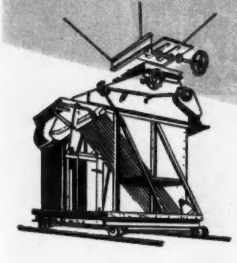
All units can be fitted with dual SACK HOIST for low coke hoppers.



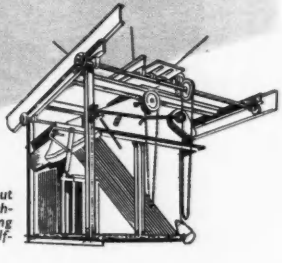
Standard unit arranged for continuous running, as used for truck or lorry loading.

Standard unit fitted with clutch and hand control for de-breezing, weighing and bagging coke as a self-contained unit on one chassis





Standard unit but incorporating weighing and bagging equipment as a self-contained unit on one chassis.



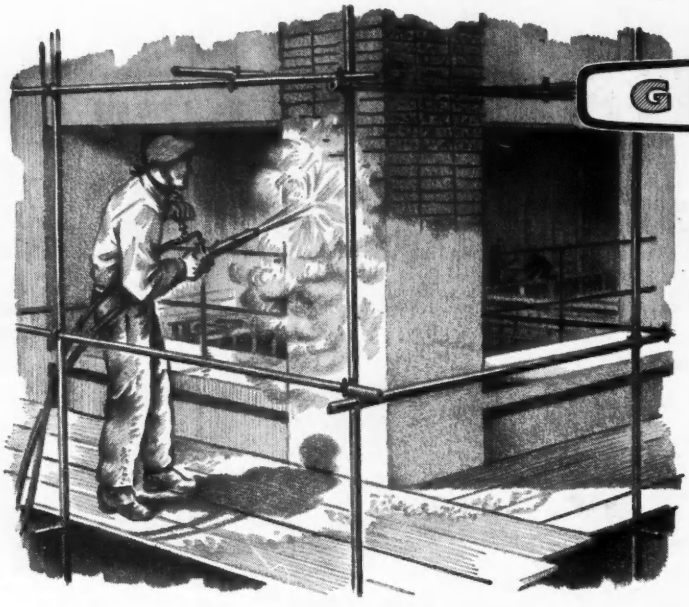
Standard unit but incorporating weighing and bagging equipment as a self-contained unit.

Buy ACE and you buy RELIABILITY

use ACE DE-BREEZING SCREENS screens

A.C.E. MACHINERY LIMITED, HARLEQUIN AVENUE, GREAT WEST ROAD, BRENTFORD, MIDDX.

Telephone: Ealing 6262 (7 lines) and at Brixton, S.W.2

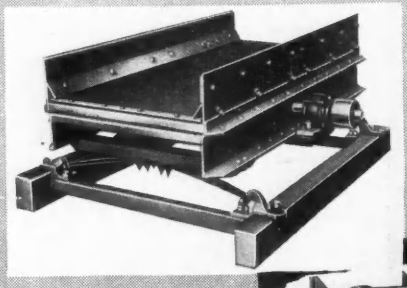


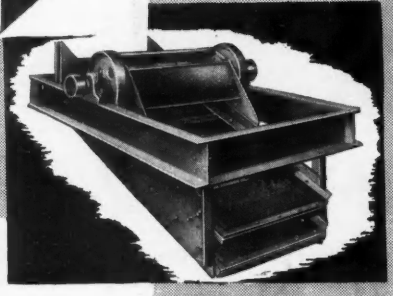
GUNITE

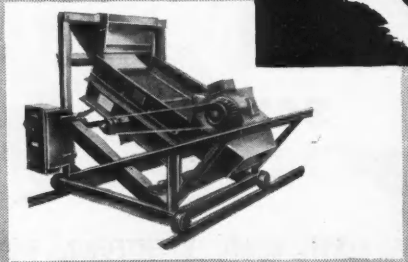
The successful way to recondition defective concrete structures, encase structural steelwork, and line tunnels and water reservoirs. Developed and applied in all parts of the world with the resources, experience and skill of The Cementation Company, Ltd.

BY THE CEMENTATION Company Limited

BENTLEY WORKS · DONCASTER · Tel. DON. 54177-8-9







PEGSON Screens FOR COAL AND COKE HANDLING

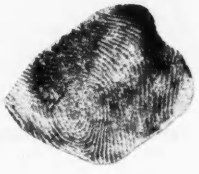
PEGSON LTD.
IDDESLEIGH HOUSE,
CAXTON ST., LONDON S.W.1.
Tel. ABBEY 2373

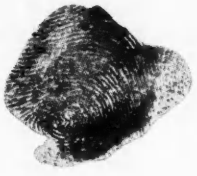
Works : Coalville, Leicestershire. Telephone : Coalville 234.

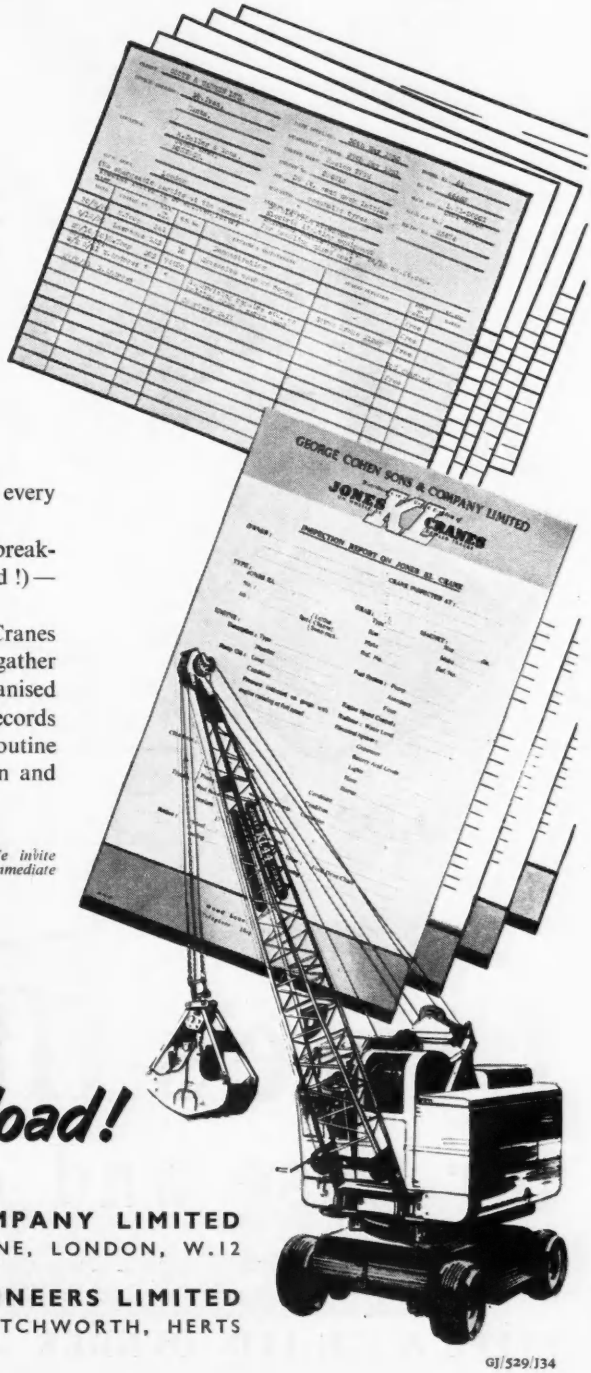
A Company of the Mellor Bromley Group.

JONES CRANES

HAVE THEIR 'DABS' ON FILE







A full record is kept by us of the history of nearly* every Jones Crane in existence.

Maintenance visits by Jones Service Engineers, repairs, breakdowns, replacements, comments by drivers (good or bad !)—all are carefully noted in our dossiers.

The advantages of this to you are numerous. Jones Cranes are used in almost every industry; the information we gather of **how** they are used helps us to solve problems of mechanised handling for people in many different ways. The records enable us to make certain every crane receives its routine check-up at the right time, which guards against sudden and perhaps expensive breakdowns.

★ *Occasionally we do lose sight of a crane when it changes hands. We invite notification of such transfers, so that the new owner can be certain of immediate service from our Specialist Service Engineers whenever he demands it.*

JONES KL CRANES

take the load!

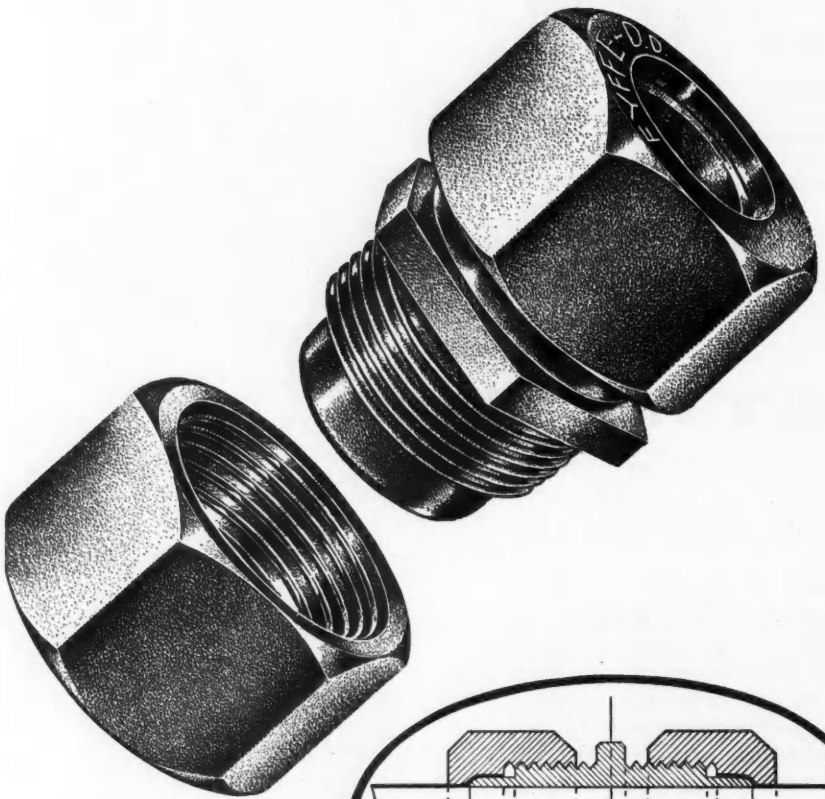
THE 600 GROUP OF COMPANIES

Distributed in the United Kingdom by :
GEORGE COHEN SONS & COMPANY LIMITED
WOOD LANE, LONDON, W.12

Designed, Manufactured and Exported by their Associates :
K & L STEELFOUNDERS & ENGINEERS LIMITED
LETCHWORTH, HERTS

GJ/529/134

Fyffe's fittings
for speed and efficiency



'D.D.'

A manipulative joint of unequalled efficiency.

Maximum seal efficiency —by line contact at right angles to the tube axis.

In use since 1920 — the original fitting for light gauge copper tube.

Made in flange form for large size ($2\frac{1}{2}$"–8").

Unaffected by lateral pressure or vibration.

Fyffe's fittings
for ease and economy

Fyffe's manufacture a complete range of compression and capillary fittings in the "D.D.", "Coneor", "Instantor," and "Intex P.T." patterns.

FYFFE & CO. LTD. DUNDEE (A SUBSIDIARY COMPANY OF IMPERIAL CHEMICAL INDUSTRIES LTD.)

F14

HOWDEN
CENTICELL

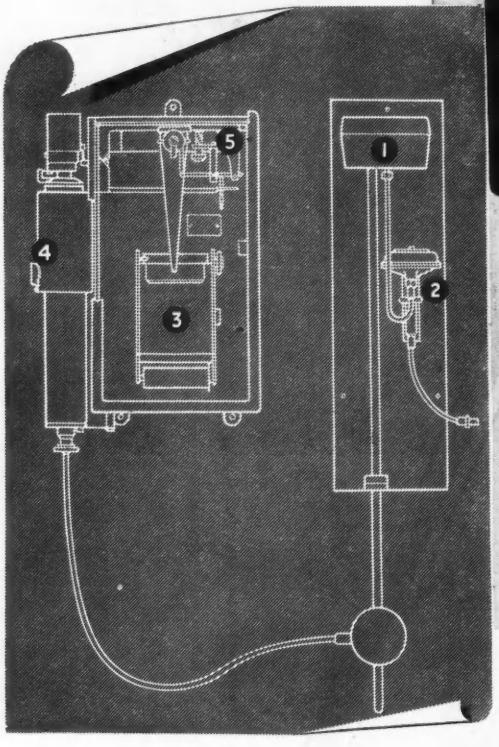
The 'Centicell' has a very high efficiency in dust removal, without any considerable loss of sensible heat.

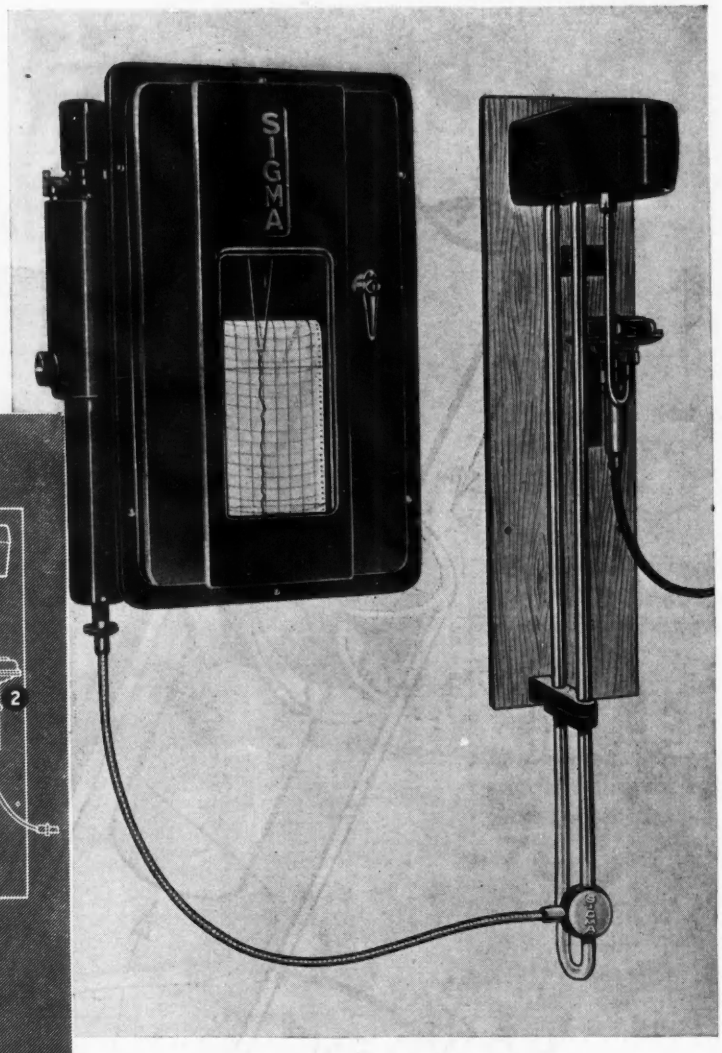
It reduces slagging of producer-gas nostrils and combustion chamber silica work, and eliminates much of the heavy maintenance cost of flue cleaning.

JAMES HOWDEN & CO. LTD.
195 Scotland Street, Glasgow, C.5.
15 Grosvenor Place, London, S.W.1.

HOWDEN

The new Sigma Recording Calorimeter





Outstanding features

1. Gas Flow Regulator can be calibrated to suit all known gases.
2. Metal seatings in diaphragm governor.
3. Sprocket driven chart table with rewinder.
4. Fitting for Barometric Compensator for town gas.
5. Frictionless magnifying system.

Can be used for Automatic Control of C.V.
Can be fitted with Distance Transmitter.

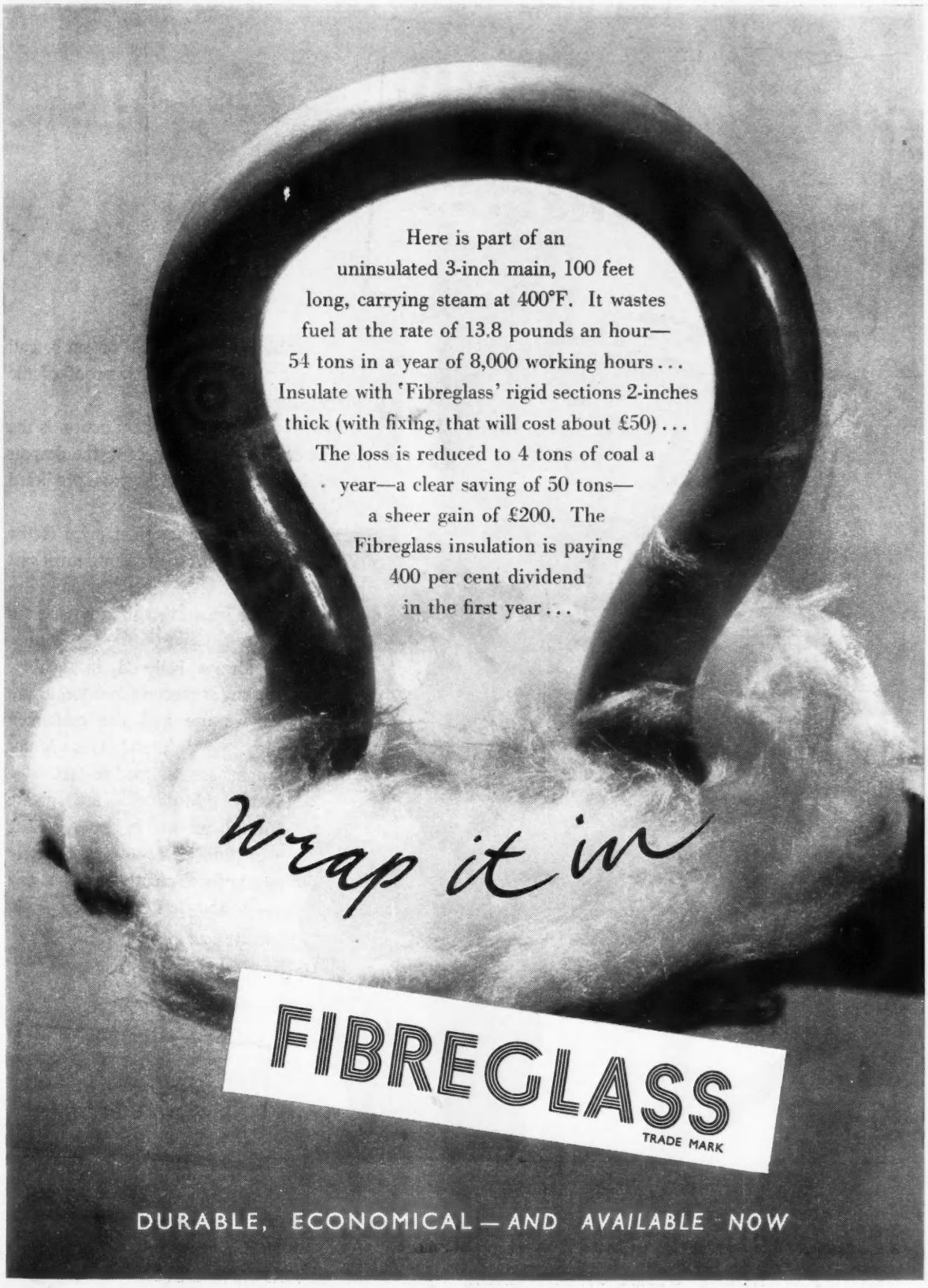
Old Type Calorimeters still available for early delivery

SIGMA
INSTRUMENT CO. LIMITED

Instrument makers for the Gas Industry

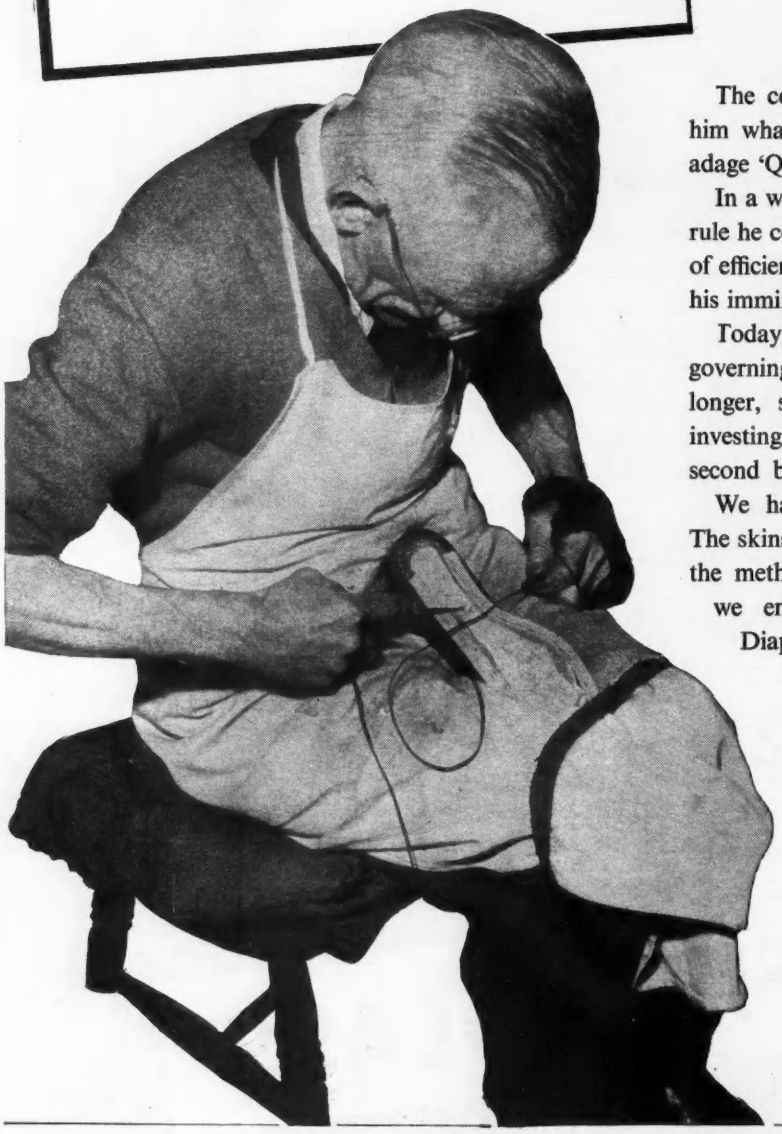
LETCHWORTH · HERTFORDSHIRE

FWS 230


Here is part of an uninsulated 3-inch main, 100 feet long, carrying steam at 400°F. It wastes fuel at the rate of 13.8 pounds an hour—54 tons in a year of 8,000 working hours... Insulate with 'Fibreglass' rigid sections 2-inches thick (with fixing, that will cost about £50)... The loss is reduced to 4 tons of coal a year—a clear saving of 50 tons—a sheer gain of £200. The Fibreglass insulation is paying 400 per cent dividend in the first year...
wrap it in
FIBREGLASS
TRADE MARK
DURABLE, ECONOMICAL—AND AVAILABLE NOW

Fibreglass Limited, Ravenhead, St. Helens, Lancs. (St. Helens 4224)

Making things last . . .



The cobbler, shoe maker or snob, call him what you will, is living proof of the adage 'Quality Pays'.

In a world where mass production is the rule he continues in business to the despair of efficiency experts who long ago predicted his imminent eclipse.

Today, Quality rather than price is the governing factor. As everything must last longer, so more and more people are investing in the best rather than buying the second best.

We have always believed in quality. The skins we buy are second to none, as are the methods we use and the craftsmen we employ. 'Multitest' Gas Meter Diaphragms are designed to last.

Today 'Multitest' are giving faithful service in many parts of the world—as accurately and efficiently as the day they left the factory.

Quality stands the test of time

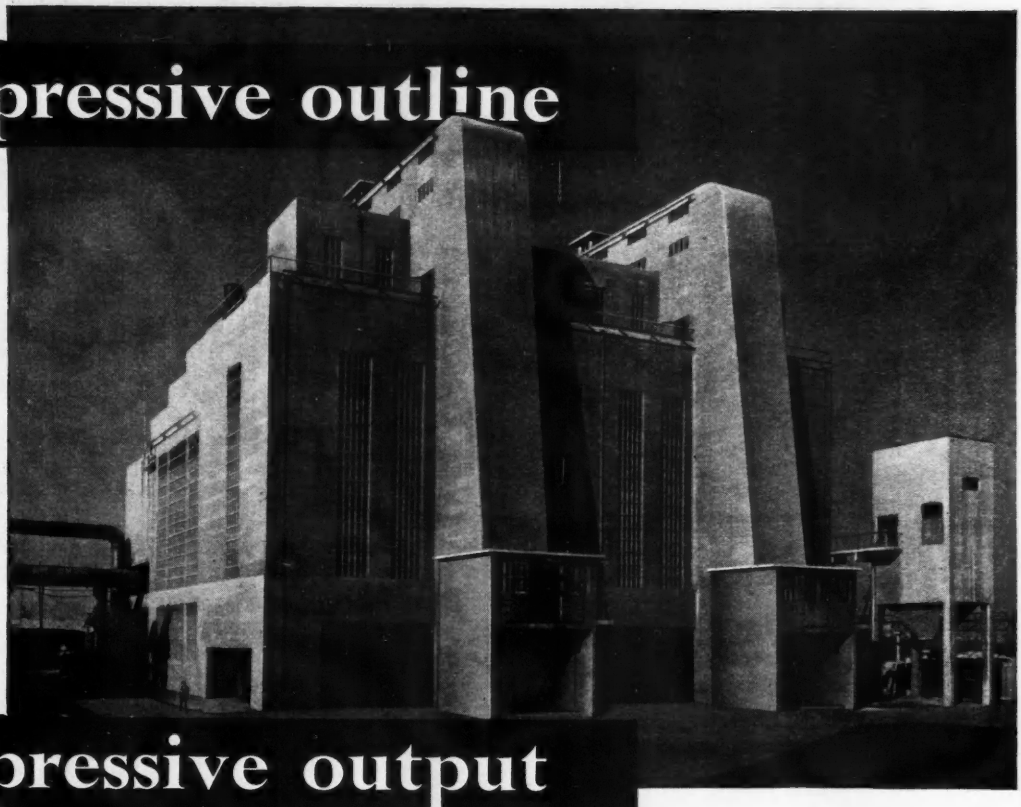
THE METROPOLITAN LEATHER CO. LTD.

WELLINGTON WORKS, QUEEN STREET, GREAT HARWOOD, BLACKBURN, LANCS.

ML

CMM 51

Impressive outline



Impressive output

This impressive installation erected at the Beckton Works of the North Thames Gas Board comprises four Carburetted Water-Gas Plants constructed by Humphreys & Glasgow Limited. The building achieves a massive beauty which is the more remarkable in an essentially functional building—literally erected around the four Plants.

The Gas Plants are equally impressive, the four sets having a capacity of 18 million cubic feet of 500 B.Th.U. gas per day. They are fully automatic and are operated by hydraulic power governed by a mechanical controller. Each set in continuous operation makes approximately 10,000 sequence value movements per day.

This is where the Lockheed hydraulic equipment comes into the picture—opening and closing the various valves at the bidding of the mechanical controller.

It is significant that Humphreys and Glasgow Limited—designers and builders of this and many other gas plants—should again choose Lockheed hydraulic equipment.

AUTOMOTIVE PRODUCTS COMPANY LIMITED, LEAMINGTON SPA, ENGLAND

Lockheed

REGD. TRADE MARK

INDUSTRIAL HYDRAULICS

SENSITIVE IN ALL CONDITIONS!

JEAVONS

CRAWFORD DISTRICT GOVERNORS...

- Absolute accuracy of controlled pressure under the most adverse conditions of inlet pressure fluctuations.
- Designed for accessibility and ease of maintenance.
- Generous diaphragm areas throughout the range of sizes.

Write for brochure 49/4/CS.

JEAVONS ENGINEERING Co.,

TIPTON · STAFFS · (PROPS: E. E JEAVONS & Co. Ltd) · 'Phone: TIPTON 2161 'Grams: 'PIPELINES' TIPTON.

Enamelware of Quality

NAMELL

LININGS, SPLASH BACKS AND TRAYS
reduce the cost of cooker maintenance

Made only by

NATIONAL ENAMELS LTD

53 NORMAN ROAD GREENWICH. S. E. 10

TELEPHONE:- GREENWICH 2266 & 2429.

Lionweld OPEN STEEL FLOORING and STAIRTREADS

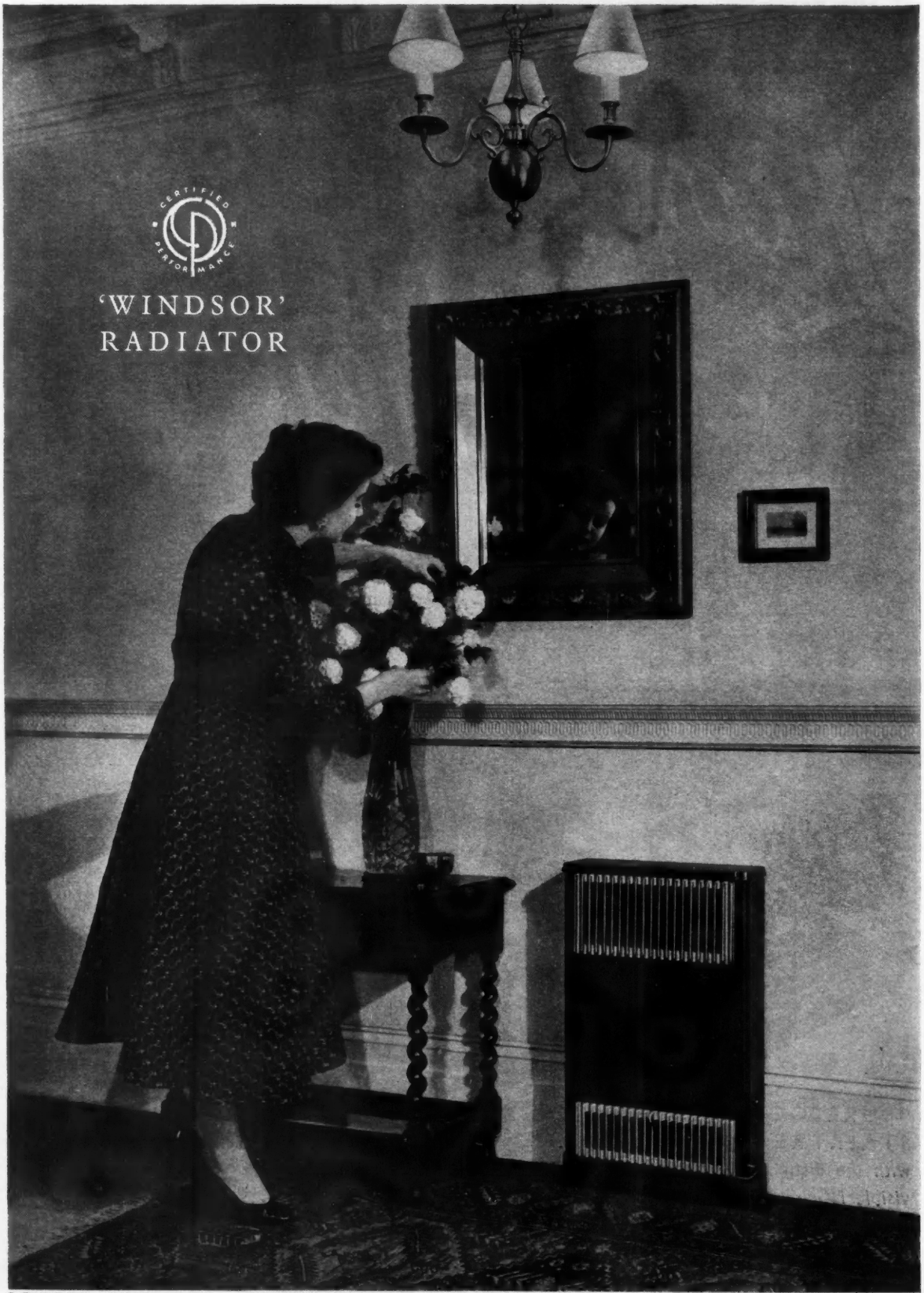
REGISTERED TRADE MARK

"SUREFOOT" STAIRTREADS *with the distinctly visible NON-SLIP FRONT SIGHT-BAR*

LIONWELD LIMITED

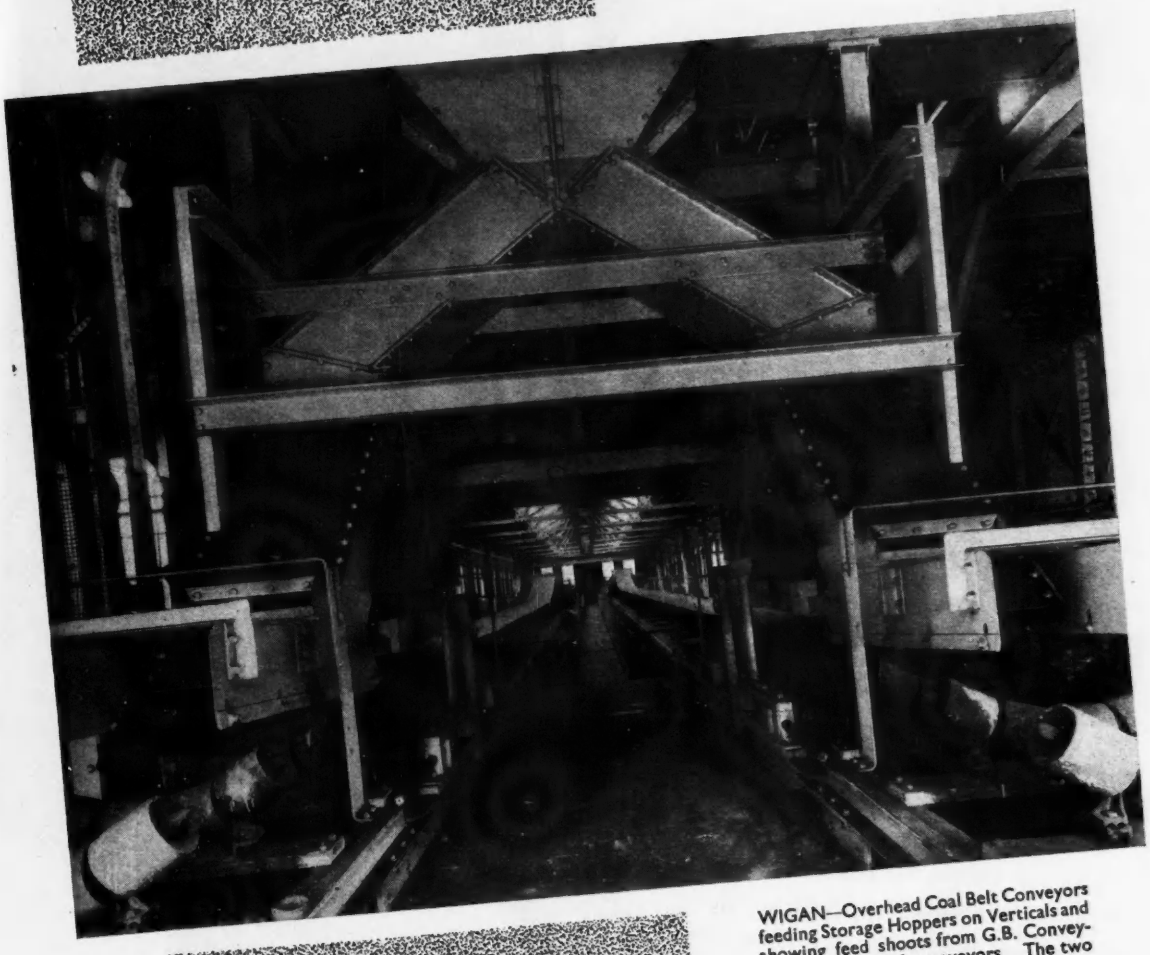
Office and Works :—
MARSH ROAD, MIDDLESBROUGH
Tel. : 3657 'Grams : "LIONWELD"
LONDON ADDRESS :
12, Stapenhill Road, North Wembley, Middlesex
Tel. : ARNOLD 5815

KA



COWPER PENFOLD & COMPANY LIMITED · 6 BASIL STREET · KNIGHTSBRIDGE · S·W·3

Telephones: KENsington 3677 · 3678 · 3679



WIGAN—Overhead Coal Belt Conveyors feeding Storage Hoppers on Verticals and showing feed shoots from G.B. Conveyors to all four belt conveyors. The two nearest conveyor belts have been removed to show idlers and tension drums.

Unretouched photograph published by courtesy of North Western Gas Board

Installation By Drakes

LIMITED · HALIFAX · YORKS

Telephone: Halifax 4701 P.B.Ex. Telegrams: Draketed, Halifax.

CONSTRUCTIONAL GAS ENGINEERS FOR MORE THAN A CENTURY

J.J.M.

RUSTODIAN prevents this sort of thing

Rustodian Rust-Inhibiting Lead Paint contains a new Pigment, Calcium Plumbate, which is one of the most powerful rust inhibitors known. It prevents deep pitting and the spreading of rust under the paint film, even when the film is scratched and the metal exposed.

- Under marine conditions it has eight or nine times the life of other commonly used rust-inhibiting paints.
- It adheres tenaciously—even to new galvanizing.
- It forms a mechanically strong, water-repellent film, which becomes progressively tougher owing to interaction between pigment and vehicle, and retains its elasticity throughout its life, following the thermal expansion and contraction of the iron without cracking.

Rustodian is an easy paint to use. It brushes out well, covers 800/900 square feet per gallon and dries overnight with an eggshell gloss finish. Available in Peach, Light Stone, Light Brunswick Green, Imperial Brown, Dark Battleship Grey and Venetian Red.

We'll gladly send a Rustodian leaflet and Rustodian colour card. Please write to any of these addresses :—

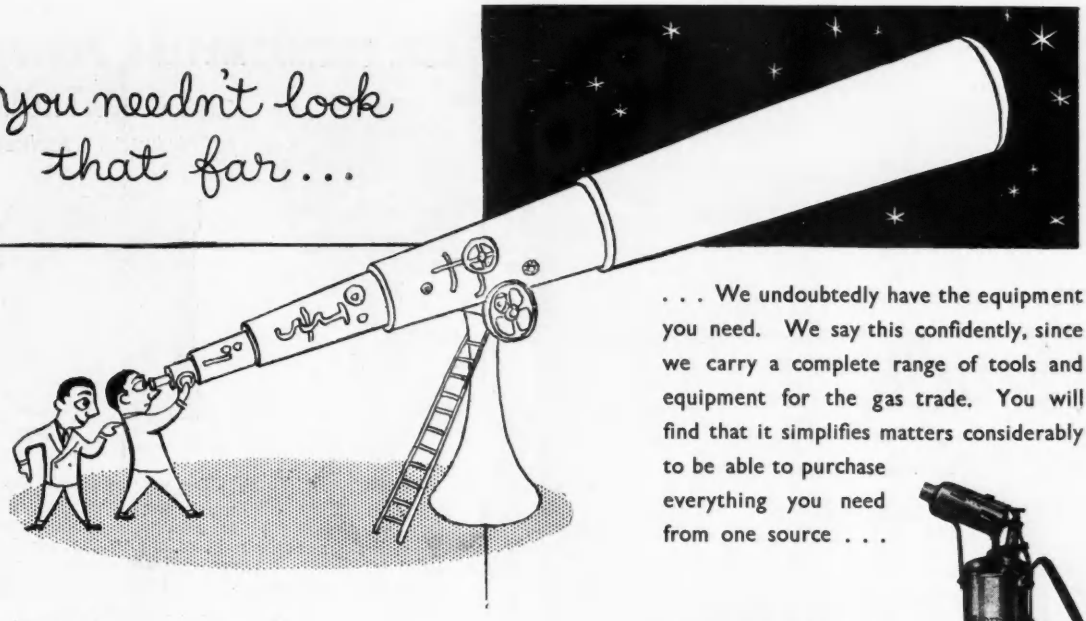
ASSOCIATED LEAD MANUFACTURERS LIMITED

IBEX HOUSE, MINORIES, LONDON, EC3
CRESCENT HOUSE, NEWCASTLE
LEAD WORKS LANE, CHESTER

ASSOCIATED LEAD PRODUCTS

EXPORT ENQUIRIES TO: THE ASSOCIATED LEAD MANUFACTURERS EXPORT CO. LTD., IBEX HOUSE, MINORIES, LONDON, EC3

you needn't look that far...



. . . We undoubtedly have the equipment you need. We say this confidently, since we carry a complete range of tools and equipment for the gas trade. You will find that it simplifies matters considerably to be able to purchase everything you need from one source . . .

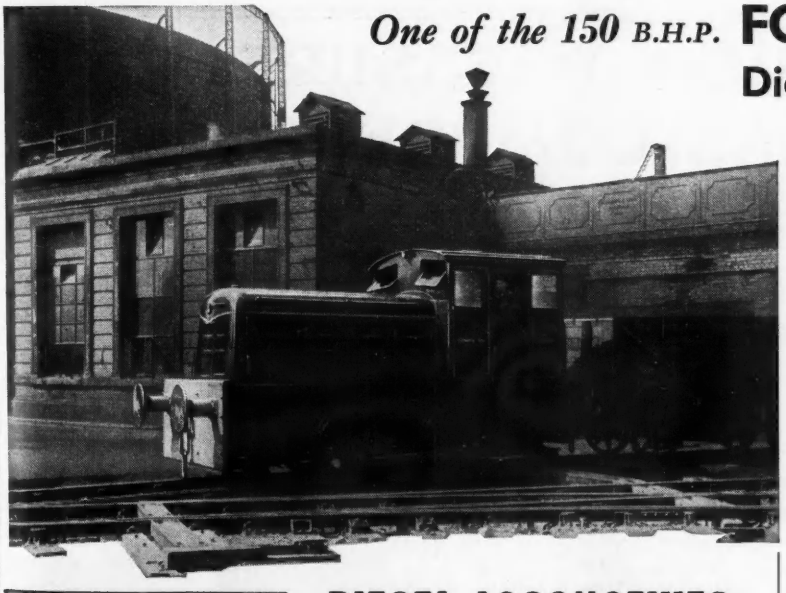
A typical Abbott Birks product

ABBOTT, BIRKS & CO. LTD.

ABBIRKO HOUSE, 90-91 BLACKFRIARS ROAD, LONDON, S.E.1 Tel. : WATerloo 4066 'Grams : ABBIRKO, SEDIST, LONDON

Complete tool and equipment service to the gas industry

P1569c



One of the 150 B.H.P. **FOWLER**

Diesel Locomotives

in service with the North Eastern Gas Board

These Fowler Diesel Locomotives move wagons in the yard quickly and with the utmost economy. Full power is instantly available at the touch of a button: no steam raising, no stand-by losses.

Some users of Fowler Diesel Locomotives

Anglo-Iranian Oil Co. Ltd., Llandarcy.
British Railways.
Carntyne Steel Castings Co. Ltd., Renfrew.
Joseph Crosfield & Sons Ltd., Warrington.
Dorman, Long & Co. Ltd., Middlesbrough.
Fisons Ltd., Immingham and Avonmouth.
John Garrington & Sons Ltd., Bromsgrove.
Guest, Keen & Nettlefolds Ltd., Cardiff.
Imperial Chemical Industries Ltd.
Richard Johnson and Nephew Ltd., Manchester.
Michelin Tyre Co. Ltd., Stoke-on-Trent.
National Coal Board.
North Devon Clay Co., Torrington.
Pressed Steel Co. Ltd., Cowley, Oxford.
Shell-Mex and B.P. Ltd.
The Steel Company of Scotland Ltd., Glasgow.

FOWLER LEEDS **DIESEL LOCOMOTIVES**

In rail gauges from 2 ft.—5 ft. 6 ins.

Information and literature from **John Fowler & Co. (Leeds) Ltd., Leeds, Yorks.**

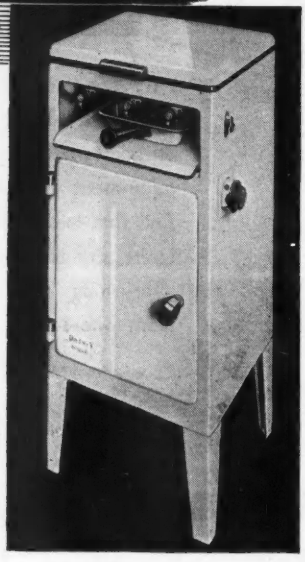
Telephone: Leeds 30731 (10 lines)

A PRODUCT OF THE MARSHALL ORGANISATION, GAINSBOROUGH, ENGLAND

B

A GREAT SUCCESS IN

Small kitchens and flats



The

Dainty

MINOR

This efficient little cooker of large capacity is made especially for small kitchens and flats.

Its cast iron construction ensures durability and low maintenance cost.

For hire purchase or for simple hire the Dainty Minor is ideal.

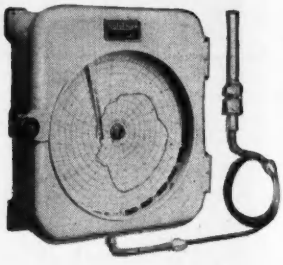
Approved and adopted by leading gas boards.

R. RUSSELL & SONS LTD., DERBY.

Agents for Scotland & Northern Ireland:
JAMES R. THOMSON & CO. LTD, 41, York Street, Glasgow C.2

DIAL THERMOMETERS, RECORDERS and CONTROLLERS

for Industrial Application.



Over 2,000,000 Rototherms in daily use are proof of reliability which with the clear dial and robust construction make them the perfect instruments for all temperature indication, control or recording. Standard and special models are available to meet most requirements. Details upon request.

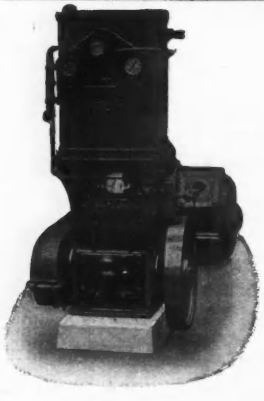
We are also specialists in bi-metallic applications

Rototherm

DIAL THERMOMETERS

THE BRITISH ROTOTHERM CO. LTD.

Merton Abbey, London, S.W. 19. Phone: LIBerty 7661

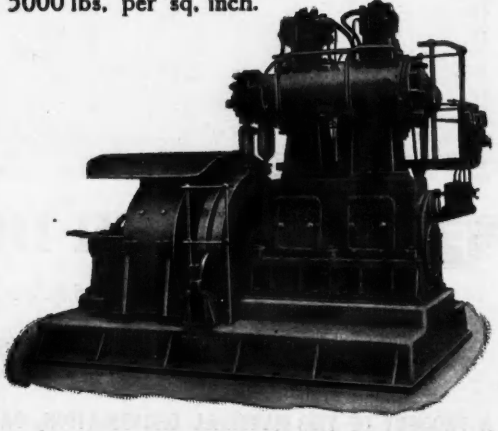


HIGH PRESSURE GAS COMPRESSORS *for*

pressures up to 5,000 lbs. per sq. in.

The illustrations show two high pressure gas compressors which we made recently to order. As specialists in the design and manufacture of compressors for both air and gases, we make compressors for a wide range of capacity and pressure up to 5000 lbs. per sq. inch.

The compressor shown above has a capacity of 25 cu. ft. of free hydrogen per minute compressed to 3000 lbs./sq. inch. The illustration on the right shows a four-stage compressor with a delivered capacity of 200 cu. ft. of free town's gas per minute compressed to 5000 lbs. per sq. inch.



For full information regarding gas compressors, write, giving particulars of the duty required, to—

REAVELL & CO., LTD.

RANELAGH WORKS, IPSWICH

Telegrams: "REAVELL, IPSWICH." Phone Nos. 2124 & 2125

C.O.L

Fifth Conference of the International Gas Union Brussels 1952

U.C.B. COKE OVENS

Numerous Gas and Coke Oven Engineers will have seen examples of U.C.B. Coke Oven Batteries (Tertre, Ville de Bruxelles, Marly) on the occasion of their Conference and will have appreciated their excellence and durability.

We invite those interested in this design of oven to get in touch with the Sole Licensees—

GAS CHAMBERS & COKE OVENS LTD.

Engineers and Contractors

CHANDOS HOUSE, BUCKINGHAM GATE, WESTMINSTER, LONDON, S.W.1

Telephone ABBEY 6912

FWS 1159

I.C.I. Copper tubes ensure trouble-free Gas Systems

For domestic gas systems, light gauge copper tubes made by the Metals Division of I.C.I. have five obvious advantages. They are:—

1 **Economical, both in laying costs and maintenance.**

2 **Not attacked by normal town gas.**

3 **Easily manipulated and installed.**

4 **Strong in relation to their light weight.**

5 **Neat in appearance.**

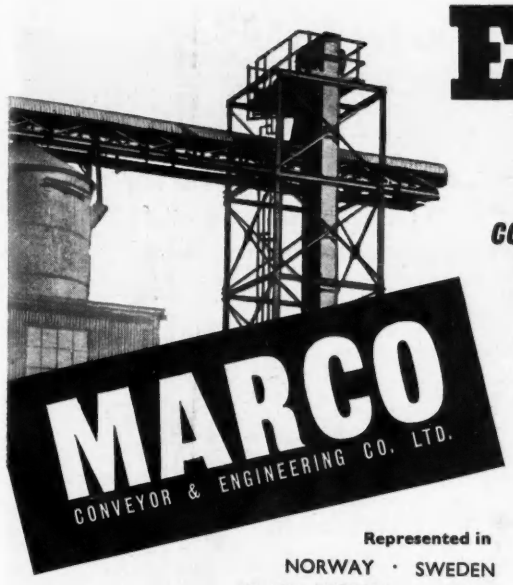
Whatever the building—farmhouse or factory; house, hotel or hospital—the job is better done with I.C.I. copper tubes.

IMPERIAL CHEMICAL INDUSTRIES LTD LONDON SW1

Fittings for copper tubes are made by Fyffe & Co. Ltd., Dundee, a subsidiary company of I.C.I.

ICI

M.204



Elevators

BELT & BUCKET · CHAIN & BUCKET · SWING
TRAY · BARREL · PORTABLE, etc.

CONVEYORS
APRON · BAND · DRAG LINK
GRASSHOPPER · PUSHPLATE
SLAT · SPIRAL · TRAY, etc.

MARCO
CONVEYOR & ENGINEERING CO. LTD.

We are designers and manufacturers of all types of handling equipment, conveyors, elevators, screens and bunkers. Also all types of foundry mechanised and re-conditioning plants.

Our Technical Department is always at your service if you are interested in devices for saving labour and for speeding production.

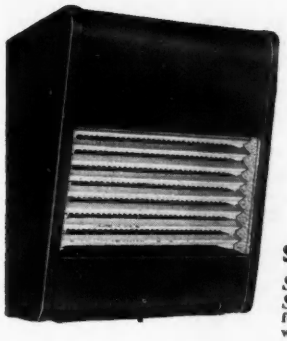
These photographs are published by the kind permission of Wellman Smith Owen Engineering Corporation Limited.

Represented in
NORWAY · SWEDEN
SOUTH AMERICA · ISRAEL
FRANCE · BELGIUM · INDIA

Catalogue on Application.

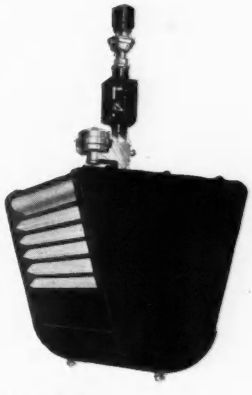
MARCO CONVEYOR & ENGINEERING CO. LTD., ROWIN WORKS, LYNN ROAD, LEYTONSTONE, LONDON E.11 'phone: LEYtonstone 2254/5 'grams: ENGIMARCO, EASPHONE
MIDLAND OFFICE :—3, Bond Street, Hockley, Birmingham, 19 · 'phone : CENtral 2917

For efficient and economical handling, it pays to consult **MARCO**



SUPERTHERM
Suspension Underfired Space Heater
for factories, canteens, workshops etc.

GOLDEN GLOW
Low Pressure Suspension Heater
for offices, restaurants, ballrooms etc.



VEETHERM *Low Pressure Suspension Heater*

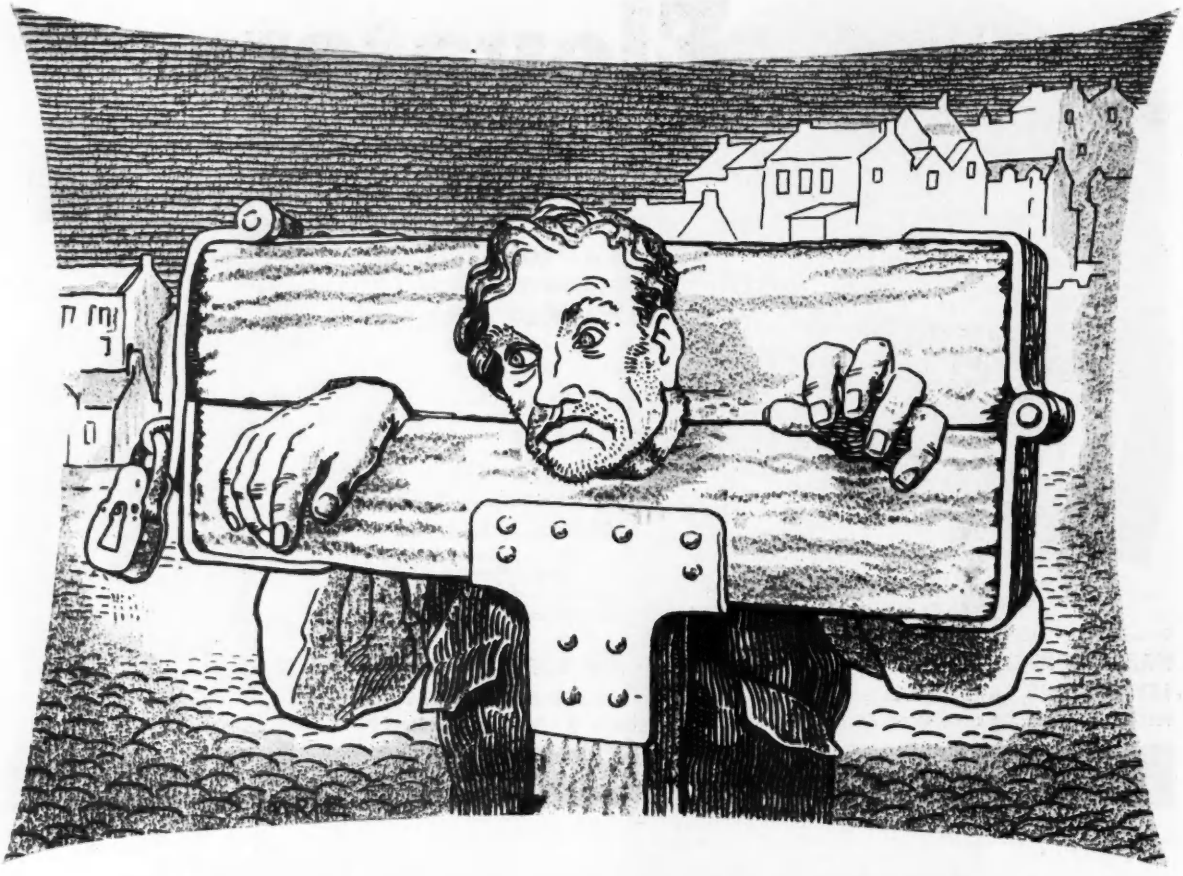
Attractively-designed double-sided overhead heater, suitable for relatively low-ceilinged premises where the high intensity Supertherm Heater cannot be used. Ideal for canteens, halls, stores etc.

Consumers are learning that
OVERHEAD HEATING cuts . . .
OVERHEAD COSTS!

RADIANT HEAT is as the heat from the sun. It is directed downwards like a beam of light by these superb suspension heaters. It wastes no fuel, and economically maintains an even warmth where warmth is needed.

50 YEARS CONTINUOUS SERVICE IN THE GAS INDUSTRY
RADIANT HEATING LTD

RADIANT WORKS · BARNSBURY PARK · LONDON N.1. · Tel. NORth 1677 (3 lines)



UNDER CONTROL

Old time methods of control, particularly of malefactors, were often harsh and ill-considered. But Peebles controls, though positive and responsive, are smooth and carefully thought out in every detail. Peebles are **best** for Governors.

Peebles

FOR GOVERNORS

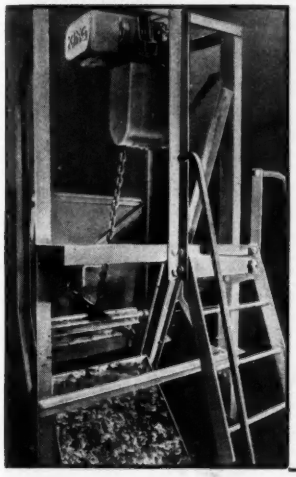
PEEBLES & CO. LTD., TAY WORKS, WEST BOWLING GREEN ST., EDINBURGH 6

Telephones : 36544 & 33069 Telegrams : "TANGENT, EDINBURGH"

IT'S CRAZY WEEK AT THE

FACTORY FOLLIES

CRAZY week performances crop up even in otherwise well-run factories when it comes to lifting and shifting. And the fun-and-games holds down output and piles up costs. Cut out the humping and heaving with a My-Te-Min electric pulley block. Let work flow to where it is wanted by overhead conveyor. Then see the difference; more work space, less fatigue, less damage, bigger output. There's a KING installation for every need, from a single My-Te-Min to a full-scale conveyor system.



WHAT'S YOUR LIFTING-AND-SHIFTING PROBLEM?

(*left*) A KING 2½-ton Mammoth Electric Pulley Block—operated by remote control—handling a skip of coal in a gasworks.

WRITE FOR ILLUSTRATED LEAFLETS

KING REGISTERED TRADE MARK

CONVEYORS, CRANES, PULLEY BLOCKS

GEO. W. KING LTD., 25 WORKS, HITCHIN, HERTS. TEL: HITCHIN, 960. AND AT STEVENAGE

S&B

Are your B.T.U.'s *under control?*

DARLINGTON
85% MAGNESIA
Insulation

Retains 90% of your Heat Energy

YOU HAVE A PROBLEM. The technical division of the Darlington group of companies will design and install an insulation scheme to meet your needs.

Manufacturers:
THE CHEMICAL AND INSULATING CO., LTD., DARLINGTON
Insulation Contractors: THE DARLINGTON INSULATION COMPANY LIMITED, NEWCASTLE UPON TYNE
Sheet Metal Fabricators: S. T. TAYLOR & SONS LIMITED, TEAM VALLEY, GATESHEAD-ON-TYNE

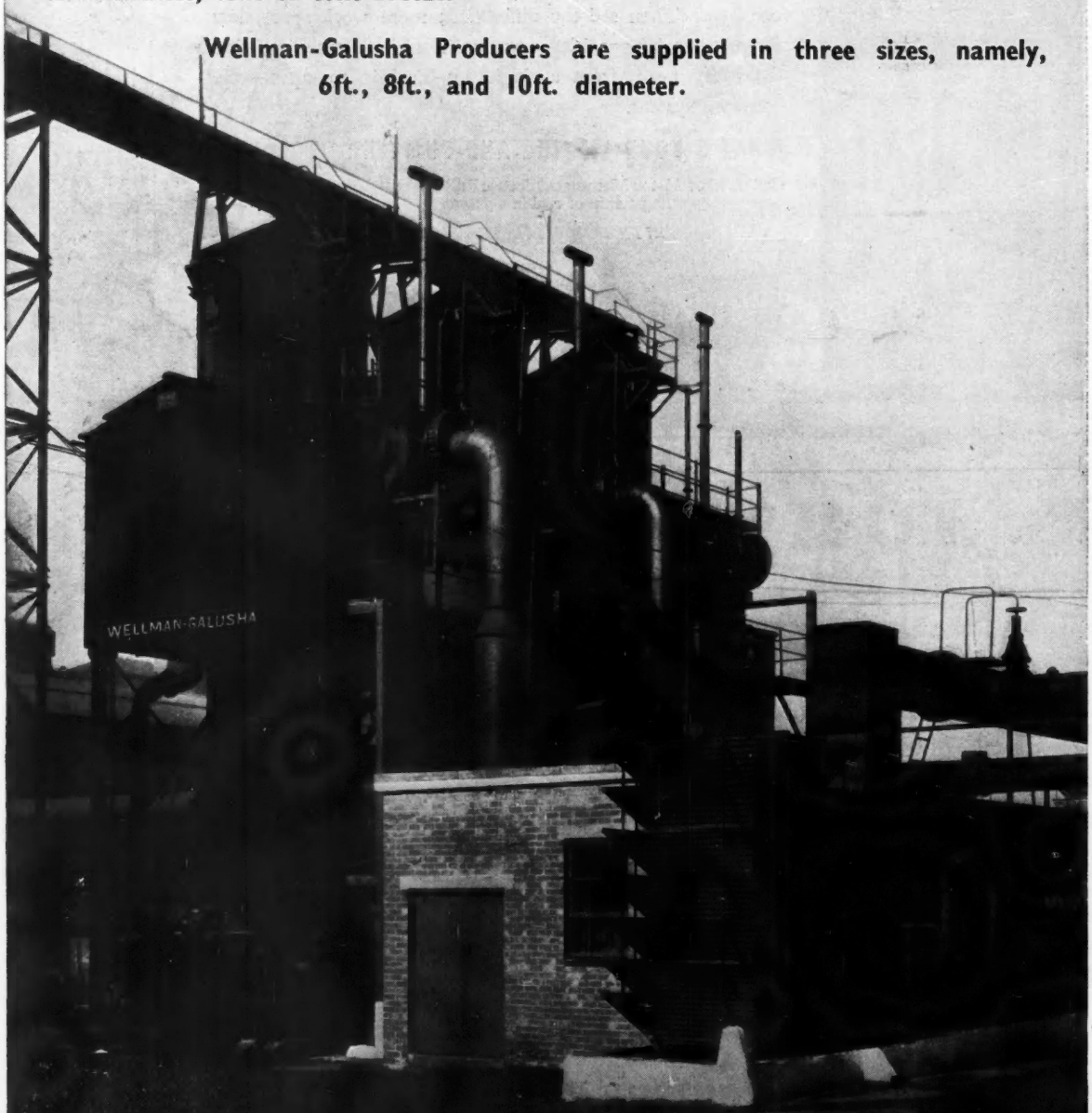
Wellman-Galusha Gas Producers

generate

High Quality Gas from Low Grade Fuels

A battery of three 8ft. diameter Wellman-Galusha Gas Producers, equipped with fuel storage bins and Gas Cleaning Plant, for the efficient gasification of anthracite, coke or coke breeze.

Wellman-Galusha Producers are supplied in three sizes, namely, 6ft., 8ft., and 10ft. diameter.



THE WELLMAN SMITH OWEN ENGINEERING CORPN. LTD.
PARNELL HOUSE, WILTON ROAD, LONDON, S.W.1 WORKS: DARLASTON, SOUTH STAFFS.

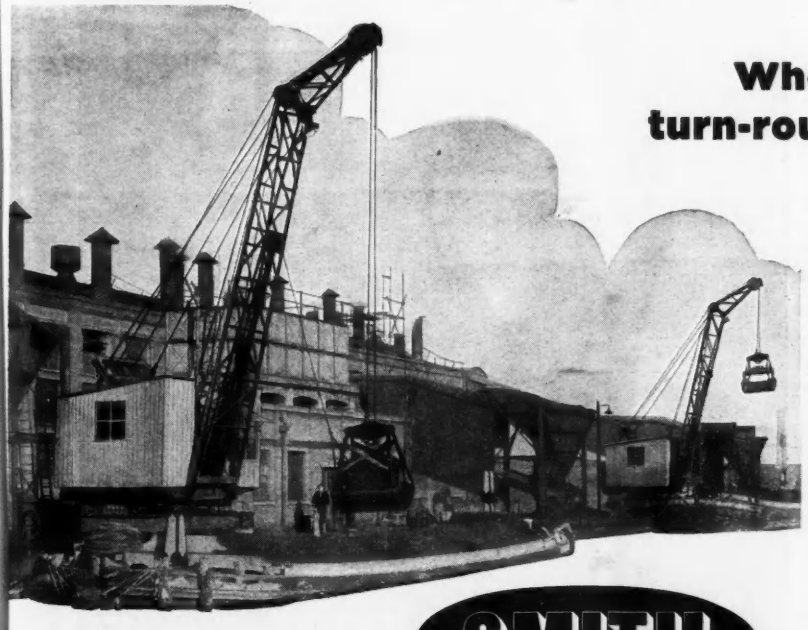
BENHAM

Unit Cooking Apparatus

One or more units of the popular "Solid-top" gas range may be joined together to form wall or central pattern fittings. Deep fat fryers, bain maries, hot closets, grills and working tables may also be incorporated if required, thus providing at an economical cost a composite gas fitting worthy of a place in the kitchen.

UNIT-CONSTRUCTION
Eight-unit fitting illustrated comprises six "Solid-top" gas range units and two gas deep-fat fryer units.

Benham and Sons Limited, 66, Wigmore Street, London, W.1
Telephone: WELbeck 9253 (16 Lines)
BIRMINGHAM · BOURNEMOUTH · BRIGHTON · MANCHESTER · CARDIFF · GLASGOW · YORK
Associated Companies: Dublin, Melbourne and Johannesburg



Where a quick turn-round is necessary

When coal is to be unloaded in a hurry to keep the barges moving : when a lot of work is to be got through in a very little time : then Smith's Electric Grabbing Cranes are the answer. Design that is not mere decoration or artist's licence, but an integral part of performance, a sturdy construction : the power to handle easily—all these add up to the name of 'Smith'.

Ask for further details.

SMITH

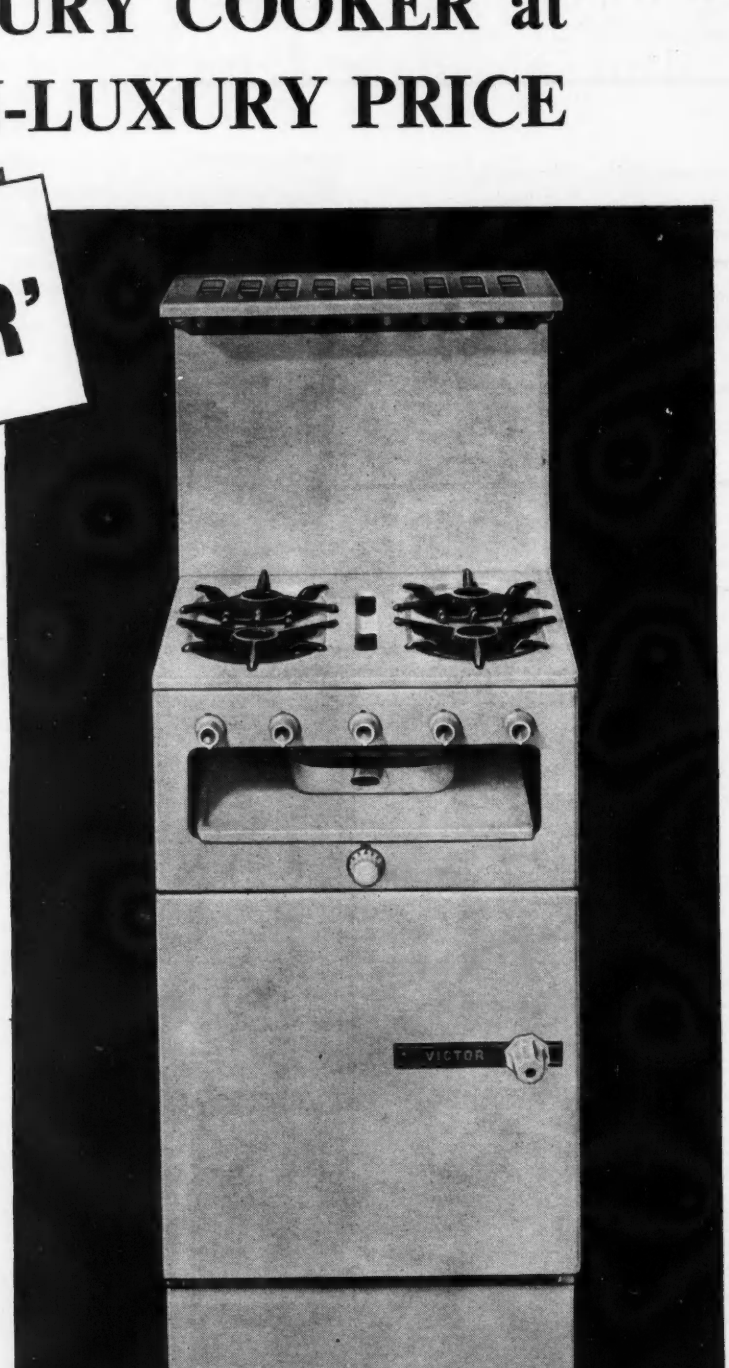
CRANES AND EXCAVATORS

THOMAS SMITH AND SONS (RODLEY) LTD. RODLEY, LEEDS

General Gas lead the way again . . .

a LUXURY COOKER at a NON-LUXURY PRICE

THE 'VICTOR'



FIRST General Gas gave you the Junior General 'baby' cooker, for the many who live in small quarters . . .

THEN General Gas created The Raymond, for those who can afford the finest . . .

NOW General Gas bring you another winner . . . this gas cooker with the luxury look and features, at a price for the millions . . . the 'Victor', the lowest price all-white enamel finish luxury gas cooker since the war!

with all these luxury features . . .

- **all-white high-grade enamel finish throughout**
- **removable plate rack and hotplate**
- **4 boiling burners and grill**
- **interchangeable removable pan supports**
- **16″ oven with 2 grid shelves, roasting pan, cake tray (oven enamel-lined)**
- **self-latching oven door**
- **pedestal base with removable front**

Show them the **'VICTOR'** *first!*

Manufactured by **GENERAL GAS APPLIANCES LTD., AUDENSHAW, MANCHESTER,** *and* **THE FORTH & CLYDE & SUNNYSIDE IRON COS. LTD., FALKIRK, STIRLINGSHIRE**

(Proprietors: Allied Ironfounders Ltd.)

INDEX TO 'JOURNAL' ADVERTISERS

A

	PAGE
A.C.E. Machinery, Ltd.	409
Abbott, Birks & Co., Ltd.	423
Accurate Recording Instrument Co.	
Acme Wringers, Ltd.	
Aerogen Co., Ltd.	
Aerograph Co., Ltd.	
Alder & Mackay, Ltd.	462
Allan Taylor (Engineers), Ltd.	
Ascot Gas Water Heaters, Ltd.	
Ascot Gas Water Heaters, Ltd. (F.A. Neat)	Cover IV
Ashmore, Benson, Pease & Co.	
Ashworth, Thos., & Co., Ltd.	
Aspinall's (Paints), Ltd.	
Associated Lead Manufacturers, Ltd.	
Associated Lead Manufacturers, Ltd. (Rustodian)	422
Automatic Telephone & Electric Co., Ltd.	
Automotive Products, Ltd.	417
Averill, C. R., Ltd.	

B

Bailey, Sir W. H., & Co., Ltd.	
Bale & Church, Ltd.	S4
Balfour, Henry, & Co., Ltd.	
Begwaco Meters, Ltd.	facing p. 454
Bell's Asbestos & Engineering, Ltd.	
Benham & Sons, Ltd.	431
Blakeley, Firth, Sons & Co., Ltd.	S1
Bolton's Superheater & Pipe Works, Ltd.	
Booth, John, & Sons (Bolton), Ltd.	
Boydell, E., & Co., Ltd.	
Bratt Colbran, Ltd.	
Bray, George, & Co., Ltd.	
Bray, W. E., & Co., Ltd.	
Bright, Son & Co. (Clerkenwell), Ltd.	
Bristol's Instrument Co., Ltd.	
British Flint & Cerium Manufacturers, Ltd.	
British Gas Purifying Materials Co.	
British Industrial Products	
British Iron & Steel Federation	
British Oxygen Co., Ltd.	
British Rothotherm Co., Ltd.	424
British Thermostat Co., Ltd.	
British Thomson Houston, Ltd.	
British Tyre and Rubber Co., Ltd.	
British Vacuum Cleaner & Engineering Co., Ltd.	
Broadbent, Thomas, & Sons, Ltd.	
Brockhouse Heater Co., Ltd.	
Broom & Wade, Ltd.	
Brotherhood, Peter, Ltd.	
Brown, J., & Co., Ltd.	
Bugden, Thos., & Co.	S2

C

Cambridge Instrument Co., Ltd.	
Cannon (Holdings), Ltd.	
Carron Co.	
Cementation Co., Ltd.	410
Central Manufacturing & Trading Co. (Dudley), Ltd.	
Chamberlain Industries, Ltd.	
Chaseside Engineering Co., Ltd.	
Chemical Engineering Wiltons, Ltd.	
Chemical & Insulating Co., Ltd.	429
Cinema-Television, Ltd.	
Clapham Bros., Ltd.	
Clayton, Son & Co., Ltd.	
Clifford Engineering Co., Ltd.	
Cochran & Co., Annan, Ltd.	
Cohen, George, Sons & Co., Ltd.	411
Collins, Thomas, & Co., Ltd.	
Concrete Proofing Co., Ltd.	
Consolidated Pneumatic Tool Co., Ltd.	
Cort, Robert, & Son, Ltd.	
Coventry Chromium Plating Co., Ltd.	
Cowper Penfold & Co., Ltd.	420
Cox & Danks, Ltd.	
Crane, Ltd.	408
Crone & Taylor, Ltd.	
Crosby & Co., Ltd.	
Crosslands (Rugeley), Ltd.	
Crossley Bros.	
Curtis, A. L., & Co.	
Cutler, Samuel, & Sons, Ltd.	

D

Davey, Paxman & Co., Ltd.	
Dawe Instruments, Ltd.	
De la Rue, Thomas, & Co., Ltd. (Potterton Gas Group)	
Demolition & Construction Co., Ltd.	
Dempster, R. & J., Ltd.	
Dempster, Robert, & Sons, Ltd.	
Derbyshire Silica Firebrick Co., Ltd.	
Dexion, Ltd.	
Diaphragm & General Leather Co., Ltd.	
Dick, R. & J., Ltd.	
Donkin (The Bryan) Co., Ltd.	Cover II
Douglas, Robert M., (Contractors), Ltd.	
Douglas, William, & Sons, Ltd.	
Drakes, Ltd.	421
Drew, H. B., Ltd.	S6
Dunlop & Ranken, Ltd.	

E

E.B. Refractory Cement Co., Ltd.	
Edgar, William, & Son, Ltd.	
Elcontrol, Ltd.	
Electroflo Meters Co., Ltd.	
Electrolux, Ltd.	
Elliott Bros. (London), Ltd.	
English Electric Co., Ltd.	
Ether, Ltd.	
Evershed & Vignoles, Ltd.	
Evode, Ltd.	
Ewart Chainbelt Co., Ltd.	
Ewart & Sons, Ltd.	
Expanded Metal Co., Ltd.	

F

	PAGE
Falk Stadelmann & Co., Ltd.	
Fibreglass, Ltd.	415
Flavel, S., & Co., Ltd.	452
Fluxite, Ltd.	
Four Oaks Spraying Machine Co., Ltd.	
Fowler, John, & Co. (Leeds), Ltd.	423
Franki Compressed Pile Co., Ltd.	
Fraser & Chalmers, Engineering Works	
Fry's Metal Foundries, Ltd.	
Fyffe & Co., Ltd.	412

G

Gas Chambers & Coke Ovens, Ltd.	425
Gas Purification & Chemical, Ltd.	S4
General Descaling Co., Ltd.	
General Electric Co., Ltd.	
General Gas Appliances, Ltd.	432
Gibbons Bros., Ltd.	
Gibbons (Dudley), Ltd.	
Gibson, John, & Son, Ltd.	
Glover, George, & Co., Ltd.	407
Glover, Thomas, & Co., Ltd.	436
Godfrey, Sir George, & Partners (Industrial), Ltd.	
Goodall Clayton & Co., Ltd.	
Goodyear Mechanical Goods	
Grant & West, Ltd.	
Graphite Products, Ltd.	
Green, E., & Son, Ltd.	
Green & Boulding, Ltd.	
Gunite Construction Co., Ltd.	S2

H

Hamilton, A. H., & Co., Ltd.	S6
Hardman & Holden, Ltd.	S3
Harris & Pearson, Ltd.	
Harris Engineering Co., Ltd.	
Harrisons (London), Ltd.	S4
Harvey, G. A., & Co. (London), Ltd.	
Hawkins, W. T., & Co.	
Hewitt Construction Co., Ltd.	
Hickson's Timber Impregnation Co. (G.B.), Ltd.	
Hilmor, Ltd.	
Holden & Brooke, Ltd.	
Holmes, W. C., & Co., Ltd.	S5
Honeywell-Brown, Ltd.	
Horseley Bridge & Thomas Piggott, Ltd.	
Horstmann Gear Co., Ltd.	
Howden, James, & Co., Ltd.	413
Hughes, F. A., & Co., Ltd.	
Humphreys & Glasgow, Ltd.	434

I

Ideal Boilers & Radiators, Ltd.	
I.C.I., Ltd. (Metals Division)	426
Ingham, John, & Sons, Ltd.	
International Combustion, Ltd.	

J

Jeavons, E. E., & Co., Ltd.	
Jeavons Engineering Co.	418
Jenkins, W. J., & Co., Ltd.	
Johnson, C. H., (Machinery), Ltd.	S1

K

Keay, E. C. & J., Ltd.	
Keith Blackman, Ltd.	S6
Kerr, John, & Co. (M/C), Ltd.	
King, Geo. W., Ltd.	429
King, Walter, Ltd.	462
Kings Patent Agency, Ltd.	S4
Kirk & Co. (Tubes), Ltd.	
Kirkham Hulett & Chandler, Ltd.	
Kleenoff Co.	
Klinger, Richard, Ltd.	

L

Laidlaw, R., & Son (Edin.), Ltd.	
Lamont, James H., & Co., Ltd.	
Lancashire Dynamo & Crypto, Ltd.	
Lawler, Ayers & Co., Ltd.	
Le Bas Tube Co., Ltd.	
Leeds X.L. Fire Cement Co.	S4
Lionweld, Ltd.	419
Lind, Peter, Ltd.	

M

Macpherson, Donald, & Co., Ltd.	
Magnetic Valve Co., Ltd.	
Main, R. & A., Ltd.	458
Marco Conveyor & Engineering Co., Ltd.	427
Master Gas Cookers, Ltd.	
Mavor & Coulson, Ltd.	
Mechanical Handling	
Meigh Castings, Ltd.	
Meltham Silica Fire Brick Co., Ltd.	
Mercol Products, Ltd.	
Messenger & Sons, Ltd.	
Meters, Ltd.	
Metropolitan Leather Co., Ltd.	416
Milnes Meters, Ltd.	
Mitcham Smelters, Ltd.	S2
Mitchell, H., & Co.	
Moler Products, Ltd.	
Monk, A., & Co., Ltd.	
Morris Commercial Cars, Ltd.	

N

National Benzole Co., Ltd.	
National Enamels, Ltd.	418
Newton Chambers & Co., Ltd.	
Norwest Construction & Co., Ltd.	facing p. 455
Nu-Swift, Ltd.	S4

O

Olding, Jack, & Co., Ltd.	
Orme, Evans & Co., Ltd.	
Oxley Engineering Co., Ltd.	

P

Parkinson & Cowan (Gas Meters), Ltd.	436
Parkinson Stove Co., Ltd.	
Pass, E., & Co., Ltd.	
Peckett & Sons, Ltd.	

	PAGE
Peebles & Co., Ltd.	428
Peel, H., Ltd.	
Pegson, Ltd.	410
Perl Controls, Ltd.	
Plus Gas Co., Ltd.	
Power Gas Corporation, Ltd.	
Power Jacks, Ltd.	
Powers-Samas Accounting Machines (Sales), Ltd.	
Pratt Engineering Co.	
Press, William, & Son, Ltd.	
Pulsometer Engineering Co., Ltd.	

R

Radiant Heating, Ltd.	427
Radiation, Ltd.	450, 451
Rawlplug Co., Ltd.	
Reavell & Co., Ltd.	424
Riley, A. J., & Son, Ltd.	
Roberts, R. E., & Sons, Ltd.	
Robinson, J. H., & Co. (Liverpool), Ltd.	
Royles, Ltd.	
Rozalex, Ltd.	
Russell, R., & Sons, Ltd.	424

S

Salter, T. E., Ltd.	
Saunders Valve Co., Ltd.	
Scottish Non-Ferrous Tube Industries, Ltd.	
Shannon, Ltd.	435
Siebe Gorman & Co., Ltd.	
Sigma Instrument Co., Ltd.	414
Simon-Carves, Ltd.	
Simon, Richard, & Sons, Ltd.	
Sisson, W., & Co., Ltd.	
Slingsby, W., & Co., Ltd.	
Smith Meters, Ltd.	
Smith, Thos., & Sons (Rodley), Ltd.	431
Spence, Peter, & Sons, Ltd.	
Spencer Bonecourt, Ltd.	S2
Sperryn & Co., Ltd.	
Standard Furnace & Setting Co., Ltd.	
Stanton Ironwork Co., Ltd.	
Staveley Iron & Chemical Co., Ltd.	
Stein, John G., & Co., Ltd.	
Stelcon (Industrial Floors), Ltd.	
Stewart & Gray, Ltd.	
Stewarts & Lloyds, Ltd.	
Stone, J. B., & Co., Ltd.	
Stoves, Ltd.	
Strachan & Henshaw, Ltd.	
Stringer Bros.	
Sugg, William, & Co., Ltd.	
Summerson, Thos., & Sons, Ltd.	
Sutcliffe Speakman & Co., Ltd.	
Sutherland, A. G., Ltd.	

T

Taylor, F., & Sons, Ltd.	
Thomas & Bishop, Ltd.	
Thomas (Richard) & Baldwins, Ltd.	
Thompson, John, Conveyor Co.	Cover II
Thorp, Thomas, & Co., Ltd.	
Tully, Sons & Co., Ltd.	
Turners Asbestos Cement Co., Ltd.	

U

Underpressure Engineering Co., Ltd.	
United Kingdom Construction & Engineering Co., Ltd.	

V

Vale, Thomas, & Sons, Ltd.	
Visco Engineering Co., Ltd.	
Vulcan Stove Co., Ltd.	

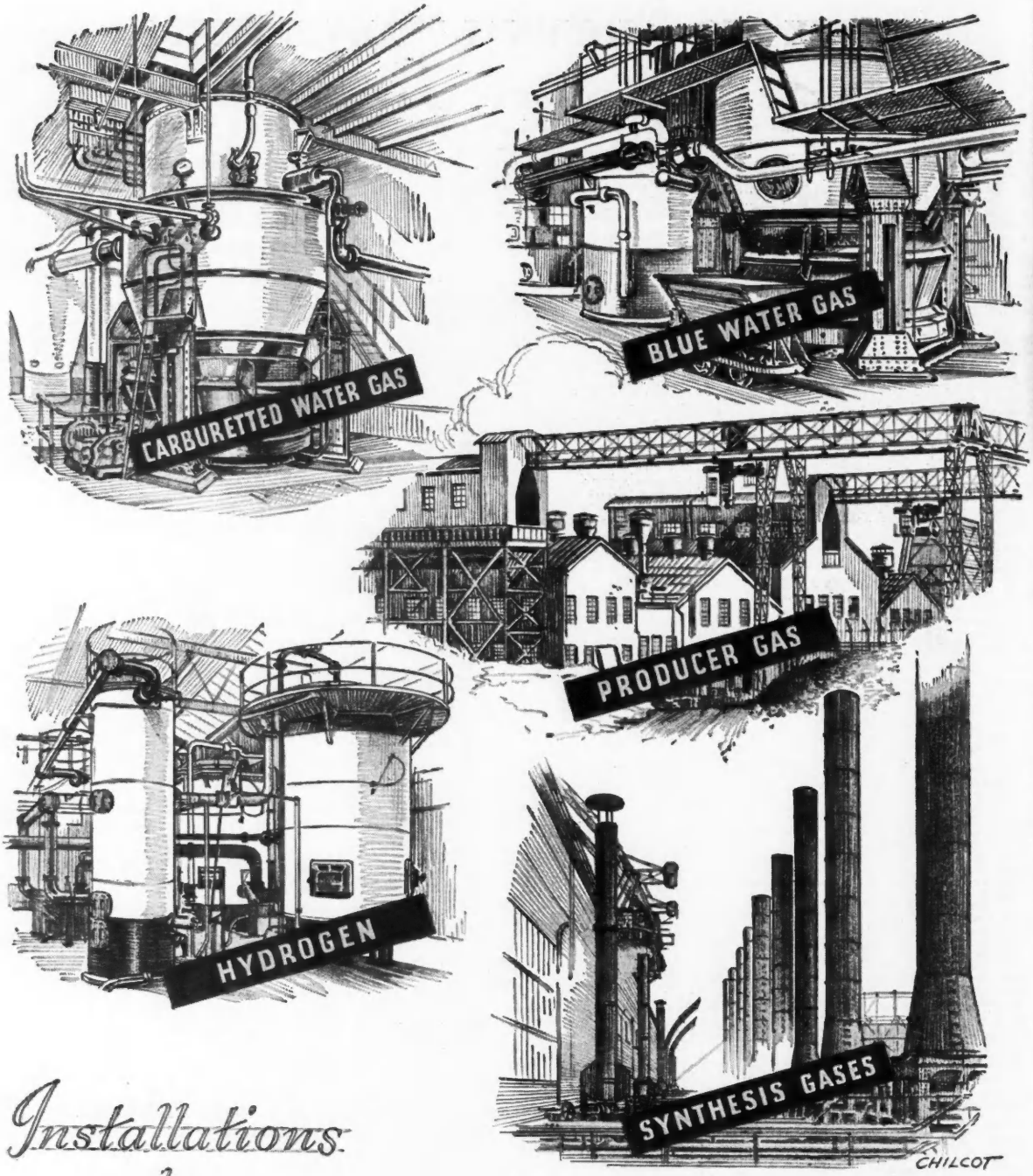
W

W.D. (Sheeters), Ltd.	
Wailes Dove Bitumastic, Ltd.	
Wakefield, C. C., & Co., Ltd.	457
Wakelin, F. H., Ltd.	
Walker, C. & W., Ltd.	
Walker, Crosweller & Co., Ltd.	
Waller, George, & Son, Ltd.	
Ward, Thos. W., Ltd.	461
Webster, H. R., Ltd.	
Wellington Tube Works, Ltd.	
Wellman Smith Owen Engineering Corpn., Ltd.	430
Wessex Industries (Poole), Ltd.	
West's Gas Improvement Co., Ltd.	Cover III
West Hunwick Silica & Firebrick Co., Ltd.	
West's Piling & Construction Co.	
Westwood & Wrights, Ltd.	
Whessoe, Ltd.	Cover I
Whitehouse, Wm., & Co., Ltd.	
Whittaker Hall & Co. (1929), Ltd.	
Wilkes, A. H., & Co., Ltd.	
Willey & Co., Ltd.	
Williams, John E., Ltd.	
Williamson Cliff, Ltd.	
Wilson, George, Gas Meters, Ltd.	
Winn & Coales, Ltd.	
Woodall-Duckham Vertical Retort & Oven Construction Co. (1920), Ltd.	445
Wood, Hugh, & Co., Ltd.	
Wright, Alexander, & Co., Ltd.	407

Y

Yorkshire Copper Works, Ltd.	

Appointments Vacant	S4
Appointments Wanted	
Contracts Open	
Educational	
Financial	
Miscellaneous	
Patents	S4
Plant For Sale & Wanted	S4
Publications	
Repairs	



Installations by

HUMPHREYS & GLASGOW LTD

HUMGLAS HOUSE · CARLISLE PLACE · LONDON · S.W.1

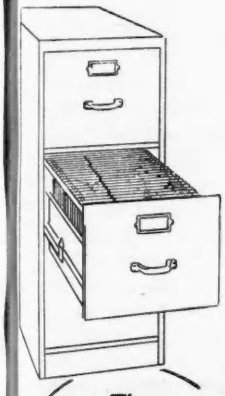
Telephone VICtoria 3961

ESTABLISHED 1892

Features:

FULL-WIDTH ANGLED TAB
SELF-ADJUSTING CAPACITY
READY-PRINTED PROGRESSING
COLOUR-CODED ACCURACY
DUAL-PURPOSE LINKING
SLIDING SIGNALS

Here is a completely new filing system. By Shannon. When you investigate it you will undoubtedly say "*Just* what we have been looking for."



Its name is Shannolink. The "Link" represents a revolutionary feature in filing. It gives you individual filing *and* concertina filing—at your option.
Note the top of the file. It goes right across. That means more room for fuller data . . . . room for name, telephone number, individuals, addresses, colour-coded to make misfiling impossible. Your clerk simply *cannot* put an "A" in the "B's"—or, for that matter, an "Aa" in the "Ab's."
Note the numerals on the right. These do a number of jobs. They permit colour-signalling the day and month of any file that needs forward action. They permit progressing . . . . of running contracts, factory production, order sequences, component deliveries . . . Each file is self-adjusting to any reasonable bulk. Each file is suspended, metal on metal. Each hangs neatly and freely—no contact with the cabinet drawer base. And this new wonder file can be fitted into your existing cabinets.
Make a point of checking this NEW FORCE in FILING now. See below.

The DUAL PURPOSE *filing system*

SHANNOLINK

Another Shannon Systems *Product*

There is a great deal to tell you about Shannolink—things which every business executive in search of higher efficiency will want to know. To get a free copy of the booklet, *The New Vision*, just write "Shannolink" on your letterheading and full details will be sent you by return. Address: The Shannon Limited, 268 Shannon Corner, New Malden, Surrey.

Gas Journal

104th YEAR OF PUBLICATION

EDITOR: NORMAN S. SMITH, B.Sc. (Gas Eng.)

11, BOLT COURT, FLEET ST., LONDON, E.C.4. Telephone: CENtral 2236-7 Telegrams: Gasking, Fleet.

VOL. 272 NO. 4668 NOVEMBER 19, 1952

CONTENTS

Page

EDITORIAL COMMENT

Declining Sales ... 437
Gas for New Towns ... 438
The Amenity Factor ... 439
International Exchange of Students ... 439

NEWS OF CURRENT EVENTS

Personal ... 439
Obituary ... 439
Northern Productivity Exhibition ... 440
Diary ... 440
New W.D. Vertical Plant at Bath ... 441
Presentation to Mr. T. C. Battersby ... 441
Eastern Juniors at Yarmouth ... 442
Long Service Awards ... 442
Clean Food ... 442
Yorkshire Juniors Annual Meeting ... 442
Third Reports of the Area Boards: Ten Surpluses, Two Deficits ... 443
Safety and Factory Efficiency ... 453
Mr. Therm is Prominent in Newest Leeds School ... 454
Talks to Gas Staffs ... 454
South Eastern Tariffs ... 454
Lecture on Heat ... 455
Coal Mining Technology ... 460
Science in a Coalfield ... 464

IN PARLIAMENT

Gas Industry Health Service: Fuel and Power Charges: Interest on Stocks: Select Committee ... 455

TECHNICAL RECORD

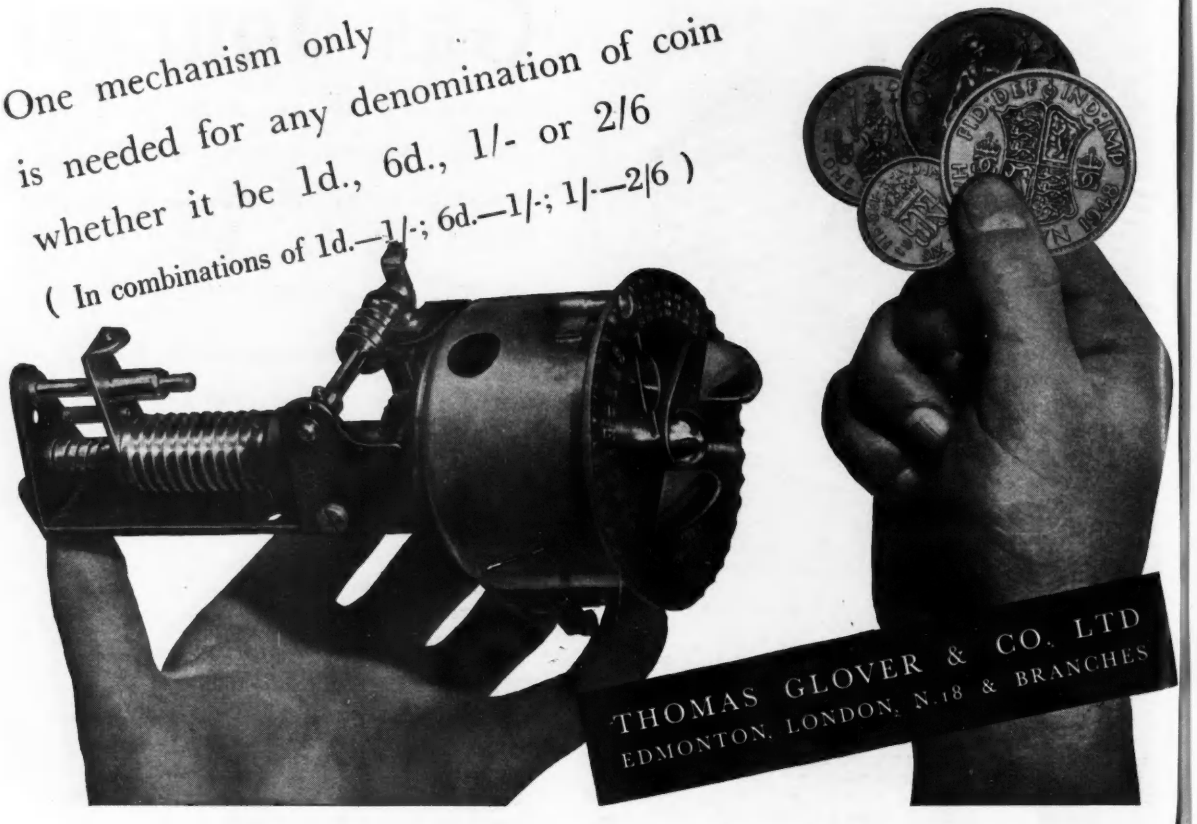
Gas Supply to New Towns. By C. D. Shann, M.A., A.M.I.C.E., M.Inst.Gas E., North Thames Gas Board 456
Labour in the Post-war Years. By D. J. Ward, M.Inst.Gas E., Deputy Engineer, Windsor Street Works, West Midlands Gas Board ... 463

Subscription Rates: Home and Empire 52/-; Foreign 60/-

Full Publishers' Notice: See Page S3 November 12, 1952

Gas Journal . . . . Walter King Ltd.

One mechanism only
is needed for any denomination of coin
whether it be 1d., 6d., 1/- or 2/6
(In combinations of 1d.—1/-; 6d.—1/-; 1/-—2/6)



Parkinson and Cowan
(GAS METERS) LTD.
★ TERMINAL HOUSE, GROSVENOR GARDENS, LONDON, S.W.1.

DOMESTIC METERS
INDUSTRIAL METERS
INFRA-RED DRIERS
REMOTE INDICATION AND CONTROL EQUIPMENT
STREET LAMPS
LABORATORY METERS
ROTARY METERS

★ THE HOME OF THE DOUBLE CENTURY METER

AP1

GAS JOURNAL

VOL. 272. No. 4668 104TH YEAR NOVEMBER 19, 1952

DECLINING SALES

ON several occasions in recent months, and notably in our issue of September 10, we have drawn attention to the sagging of sales curves, both for gas and gas appliances. Our views on the gravity of the situation now have behind them the weight of the reports and statements of accounts of the area boards for the year ended March 31, 1952. Figures given in those reports reveal a decline of 0.6% in the domestic sales of gas and, in most cases, a corresponding fall in the sales of appliances. That such a drop should be apparent in results relating to a period *before* the situation became much more grave hardly augers well for the next annual reports. Since the gas industry chooses to sell gas-burning appliances and, to a large extent, to discourage their sale by dealers, it is clear that appliance sales assume considerable importance both as a source of revenue and as an indication of consumer reaction. Perusal of the area boards' reports shows that although sales of domestic appliances were maintained fairly well, sales expansion was impeded by restrictions on publicity and that towards the end of the period under review a distinct reduction in sales was evident. It is unfortunate and unnecessary that different boards give differing amounts of information on this subject, and in certain cases comparisons with previous years which might appear odious have been glossed over. However, a fairly clear picture emerges, although results have varied enormously in different areas.

For example, we notice that the Scottish Gas Board succeeded in selling more appliances than in the previous year, the increase being due in no small measure to a most creditable rise in wash-boiler sales. In Wales, too, revenue from appliance sales is up on last year. There are good results from other boards, but in the main they are limited to certain freak sales, due perhaps to particularly extensive new housing. In general, the figures show a definite falling off, and although there is nothing in the reports to say so, the drop probably occurred at the end of the period under review and was steeper than might be supposed. The position is serious, but before examining the causes, possible consequences, and tentative solutions, it is only fair to give a much deserved pat on the back to the industry for a fine achievement in one particular sphere. We refer to the replacement of black cookers. A great deal of publicity was given to the figure of two million obsolete cookers quoted by Colonel Harold Smith two years ago. Last year 373,000 such cookers were replaced by modern appliances. What is much more remarkable is that the latest figures reveal a further replacement of 370,000 cookers. Clearly each successive year will make it more difficult to keep up this figure, partly because there are fewer black cookers to replace and partly because those remaining are more likely to be hard cases. It is therefore heartening to note that the East Midlands Gas Board has replaced, on average, 800 old cookers a week, and the North Thames Gas Board considerably more. Over the two years for which figures are available, 300,000 tons of coal have been saved by this campaign and that, as the Americans say, is quite something.

Now to this threatening decline in sales. What is its cause? We have never under-estimated the threat of purchase tax—indeed the *Journal* has condemned it from the outset—but although it still presents a major obstacle to sales of certain appliances, there is a tendency at the moment to regard it as a universal scapegoat. More dangerous is the restriction of promotional publicity. Until this is lifted it is difficult to see how the situation can be fully remedied. The fact is that it has become necessary to fight for business. We are not just in competition with electricity; our real competitors are television, cigarettes, the theatre, vacuum cleaners, furniture—in fact, anything on which the public may spend money instead of on gas. Some area boards, we believe, have been too complacent. They are unprepared for this quite sudden recession of business. In sales circles there is a great deal of skirmishing about and sharpening of swords. All very fine, but they should have been sharp 18 months ago, for that was when the first rumble of approaching battle was

heard. It is still not too late to save the situation. To carry the analogy a stage further, the troops must not conclude that because their tanks are bogged down in a morass of purchase tax and they are forbidden by Whitehall to use their publicity artillery, that it just is not worth fighting. So far as we are aware, there is no secret weapon, and they must make the best of it. There is much that can be done, but it requires a proper understanding of the urgency of the situation, a high morale, and a determination to sell despite prevailing handicaps.

This, as we see it, is the real message of the annual reports insofar as they concern sales. The warning is there in black and white and plain for all to see. If sales figures continue to fall at the present rate, the situation in a year's time will be serious indeed. We do not believe this will happen; we believe that the gas industry, in the true British tradition, will fight all the harder for being caught unprepared. Moreover, we believe that certain of the present restrictions will be lifted and that this will apply to publicity in the very near future. But one last word of warning—if our publicists are again allowed a free hand, their material has got to be a great deal stronger than in the past. While gas industry publicity has been shackled, publicity elsewhere has continued to develop rapidly. In our view gas publicity is not near enough to the man in the street; it tells him things like a schoolmaster, not like a friend. That is a job for the publicity specialists and does not concern the salesman. The latter is going to be the man of the moment, and if the gas industry, after largely ignoring him for a great many years, does not recognise this fact, it will surely live to regret it.

GAS FOR NEW TOWNS

THE third report of the Gas Council gives some remarkable figures concerning new houses provided with gas during the latest completed year and refers again to the financial aspects of supplying gas to new towns which may not be fully developed for some years. Decentralisation of population from the large towns which began before the war and was accelerated by it, and the development of new towns and new housing estates, have created unprecedented problems and opportunities for the gas industry, some of which were touched on by Mr. C. D. Shann, who was responsible for planning the gas supply for the new town of Basildon, in his presidential address to the London and Southern Junior Gas Association. London, of course, has its own peculiar problems. The population in Greater London is less now than it was in 1938, and although there has been an increase in consumers since the war, the number is still below that for 1938. On the other hand the satellite towns are being developed to accommodate populations of anything up to 60,000. Some of them are quite a long way from the nearest gasworks, and the cost of mainlaying is nearly five times as much per mile as in pre-war days (the cost of additional mains per additional consumer has actually increased 5.3 times). In the North Thames area more than £2.5 mill. has been spent since 1939 on laying mains principally to supply new building development, although due primarily to the war and partly to the policy of decentralisation consumers have decreased by 40,000. Inferences drawn from these figures by Mr. Shann are that those on the distribution side must do their utmost to keep down the cost of supplying new development, part perhaps by the use of new materials for pipes and joints and by improved methods of pipe laying. It may have to be achieved in part by adopting practices which, without affecting public safety, fall short of what we have come to regard as ideal, but above all it will have to be achieved by those responsible for designing extensions of the system selecting the most economical combination of pumping plant and pipe size for trunk supplies and the most effective layout for local mains, and by those responsible for executing the work ensuring that it is carried out by the most efficient available method.

Another aspect of the problem of gas supplies for newly developed areas is the attention now being paid to district heating schemes. In the North Thames area district heating is being installed in one new and four re-development estates. In each estate a complete system of gas mains has also been laid out to provide in all cases for cooking and refrigeration, and in some cases for other loads and for topping-up heating. District heating is based on the assumption that gas or electricity will be available to provide the topping-up heat without any regard to the cost entailed in works and distribution plant. This factor, in addition to the basic heating and hot water load being taken by district heating, is likely to increase the cost of gas and electricity, and should be considered in the total economy.

Having regard to the heavy costs involved in providing gas supplies for new towns, the development corporations are empowered by the New Towns Act, with the consent of the appropriate Government departments, to contribute towards the expenditure incurred by statutory undertakers in supplying a new town. The report of the Gas Council records that the South Eastern Board made a claim on the Crawley Development Corporation for a payment based on the amount by which the interest and sinking fund charges per therm of gas sold during the years of development will exceed the charges which will have to be borne when the town is fully developed. The bulk supply main from Croydon to the new town has been completed, but during the next few years the consumption of gas will be very much less than that required for a reasonable return on the capital expenditure incurred in providing distribution plant of sufficient capacity to meet the full demand which is finally expected. The claim, says the report, was considered by the Government departments concerned, but was finally rejected on the ground that the Board had not succeeded in proving that the circumstances of the supply were sufficiently exceptional to justify the making of a contribution.

THE AMENITY FACTOR

IT is appropriate that the industry should periodically take stock of the steps it is taking to improve the lot of its staff and workpeople—more particularly since we are an industry which has less inherent appeal than many others as a career either for the manual worker or for the aspirant to high executive levels. Small boys when asked what they want to be when they grow up, pass over such unromantic occupations as retort house stokers or purifier attendants, while such dazzling alternatives as engine drivers and airways pilots offer themselves to the childish imagination; and when the time comes seriously to consider their future career the gas industry is usually still very much among the 'also rans.' It is timely, therefore, that Mr. D. J. Ward, in his presidential address to the Midland Junior Gas Association, should have underlined some of the ways in which the industry is improving its working conditions and its welfare and educational facilities.

The production of gas is generally ranked among the less congenial industrial occupations for reasons which, up to fairly recently, have not been far to seek —namely, the comparative lack of what we have called the amenity factor. Yet for all this our industry has been remarkably free from serious labour troubles throughout the whole course of its long history, which suggests that in other respects it has been a good employer. From now on, however, this amenity factor has got to play a very much bigger part if we are to compete successfully for our share of suitable labour. Labour generally has become more 'choosey'—more critical of the job it is prepared to accept. Many who entered the Forces as mere boys came out as mature men who had gained almost a lifetime of experience in five years of service and had often risen to positions of responsibility, trust, and respect. They were naturally not content to return to the junior posts they had left. Many would not go back to indoor jobs at all. Many former manual workers succumbed to the lure of the 'white collar' occupations. All of which has rendered more difficult the task of recruiting an adequate labour force in an industry such as ours.

In Mr. Ward's address are clearly indicated the various means by which we may attract the right type of labour. Whenever new gasworks plant on any substantial scale is now inaugurated we find that special attention has been given to working conditions and welfare arrangements, safety precautions, medical services, and recreational facilities, while opportunities for education and training are being widely extended to all ranks. As Mr. Ward says, much has been done during the last few years; but much remains still to be done to bring us into line with the new conception of post-war industry.

INTERNATIONAL EXCHANGE OF STUDENTS

THE 5th annual report of the International Association for the Exchange of Students for Technical Experience has just been published and it records a satisfactory increase in the exchange of students for practical experience in industry abroad. Twenty-four British universities and colleges now co-operate together in this project and through the central office at Imperial College the Association was able to send overseas a total of 488 students and in return received 602 overseas students for experience in British industry and commerce. There are now 17 countries participating and it has been possible on an annual international income of £462 to include a total of 3,490 students in the programme during last summer. It is anticipated that Canada will take part in the exchange in 1953. Among the participating bodies are the Gas Council and the North Thames and South Eastern Gas Boards and several firms who manufacture plant and equipment used by the gas industry.

Personal

Mr. W. A. Jackson has resigned from the board of Sidney Flavel & Co., Ltd., owing to continued ill health. **Mr. Duncan Wright** has been appointed to succeed him as Chairman.

◇ ◇ ◇

Mr. Albert R. Lamb, chief accountancy assistant of the Nottingham undertaking, who is retiring at the age of 65, has been presented with a canteen of cutlery and a tea-set. The presentation was made by Mr. F. A. Barratt, divisional accountant.

◇ ◇ ◇

Mr. J. F. Ronca, O.B.E., Director and technical adviser of George Wilson Gas Meters Ltd., has received the City and Guilds of London Institute's Insignia Award in Technology, a new high-level award in industry. The award, from the hands of the Duke of Edinburgh, is a mark of distinction for those who combine with a sound practical training an adequate knowledge of the fundamental scientific principles of their industry and have shown a capacity for leadership and administration. Those who receive the award are recognised as qualified to occupy posts of special responsibility in their branch of industry. Mr. Ronca was formerly Director of Gas Administration and is a Past President of the Institute of Fuel.

Obituary

Mr. A. S. March, Director of Scientific and Projections, Ltd., died on November 11. He was 82 years of age.

◇ ◇ ◇

Mr. Walter J. Read, of Sandleheath, Hants, who had been in the employ of the Barnet and District Gas and Water Company for over 40 years, died recently aged 66.

◇ ◇ ◇

Mr. Geoffrey M. Gullick, C.B.E., chief mining director of Maver and Coulson Ltd., died at Sheffield on November 11 at the age of 63. Since 1907 he had been engaged in applying machinery to the mining of coal. His knowledge, insight, and energy helped forward the improvement of coal-mining methods throughout the Commonwealth and beyond.

◇ ◇ ◇

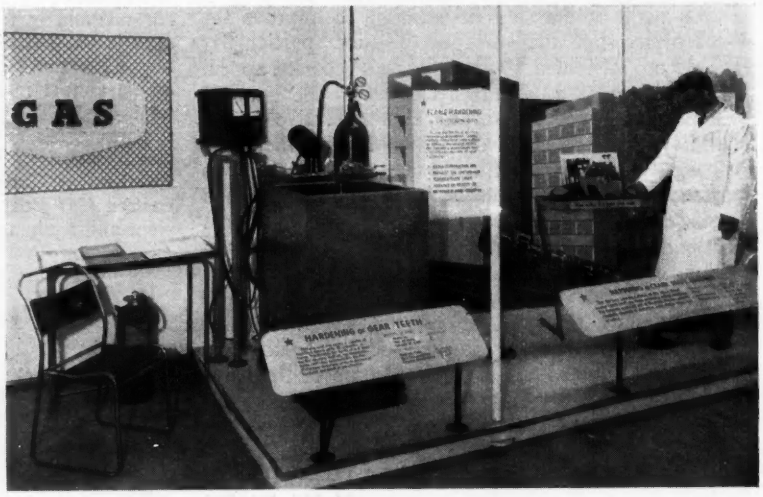
Mr. A. P. Wood, Founder and first Managing Director of the Lancashire Dynamo & Motor Co., Ltd., forerunner of Lancashire Dynamo & Crypto Ltd., died on November 7. He was 80 years of age. It was in 1899 that Mr. Wood realised that the development of industry in the Trafford Park area, coupled with the transition from steam to electric power, would produce a great demand for electric motors. With local backing he formed one of the earliest companies devoted to the manufacture of this type of equipment. Although Mr. Wood's full time association with the Company was severed 20 years ago he maintained an interest in L.D.C. affairs and was present at the festivities when the Company celebrated its Jubilee.

NORTHERN PRODUCTIVITY EXHIBITION

THE four fuel industries, coal, gas, oil and electricity co-operated in the erection of a fuel and power pavilion at the Northern Productivity Exhibition held at the Baths Hall, Newcastle, from October 30 to November 6 and officially opened by the Minister of Supply, the Rt. Hon. Duncan Sandys. The general theme endeavoured to show some of the methods by which the fuel industries had increased their own productivity or could assist other industries to do so by the correct application of fuel and power.

The Newcastle division of the Northern Gas Board chose two main applications in gas utilisation—flame-hardening and radiant heat drying. The flame-hardening exhibit featured the new oxy-town-gas flame-hardening process developed in Germany by Peddinghaus, and a Surfard machine capable of handling gears up to 18 in. diameter was in operation hardening the teeth of 4 in. diameter gears under the control of a milliscope which ensured uniform degree of hardness and depth of penetration. The hardening of such a component takes approximately one minute including quenching, with a consumption of 125 cu.ft. of town gas and 0.7 cu.ft. of oxygen.

Also on display was a 2½ cwt. crank shaft from a 112 h.p. Ruston and Hornsby diesel engine together with etched sections through the bearing surfaces showing the uniformity of treatment.



The saving in time made possible by the introduction of radiant heat drying was exemplified by a Bratt Colbran tunnel section and overhead conveyor carrying gas fire frames, a Douglas-Vespa motor cycle, and road signs manufactured by J. Needham & Sons, Ltd. The details of the reduced drying times with other advantages resulting from these installations in the Gas Board workshops and the two factories concerned were given in each case.

The exhibition was publicised largely through industry itself, and while the general public were admitted, the total attendance of some 10,000 persons consisted mainly of industrial representatives, together with organised parties from educational and technical bodies. The flame-hardening unit proved of special interest to engineering executives due to the many advantages of this new development of the process as compared with normal case hardening methods.

Diary

Nov. 20.—Midland Juniors: Half-day visit to Boulton-Paul Aircraft, Ltd., Wolverhampton. (To be repeated on November 27.)

Nov. 20-22.—Poultry Show: Olympia. Gas Council exhibit and cookery demonstrations.

Nov. 21.—London Juniors: 'Town Gas High Temperature Radiant Heating in Industry,' F. W. Lockwood (North Thames Gas Board), 178-180, Edgware Road, W.2, 6.30 p.m.

Nov. 21.—North of England Section, I.G.E., and Northern Juniors: Joint meeting; 'Steam and Power in the Gas Industry,' L. J. Clark (North Thames Gas Board); King's Head Hotel, Darlington, 2.30 p.m.

Nov. 24-28.—Brewing Trades Exhibition, Olympia. Gas Council Exhibit, stand 4/F.

Nov. 25-26.—Institution of Gas Engineers: 18th Autumn Research Meeting, Church House, Westminster, S.W.1. (For programme see *Journal,* November 5, page 327.)

Nov. 27.—North Thames G.C.C.: Westminster City Hall, Charing Cross Road, W.C.2. 2.30 p.m.

Dec. 1.—West Midlands G.C.C.: Queen's Hotel, Birmingham, 2.30 p.m.

Dec. 2.—South Eastern G.C.C.: Caxton Hall, Westminster. 10.30 a.m., followed at 2.30 p.m. by combined meeting of Consultative Council and District Committees.

Dec. 3.—Southern G.C.C.: Grand Hotel, Bournemouth.

Dec. 5.—London Juniors: Reception and Dance. Caxton Hall, Westminster, S.W.1, 6.30 p.m.

Dec. 6.—Scottish Juniors: Joint Meeting of Eastern and Western Districts. 'Some Problems of Large Scale Organisations.' Dr. J. G. Davidson, Chief Financial Officer, Scottish Gas Board, at Heriot Watt College, Edinburgh, 3 p.m.

Dec. 8-12.—Smithfield Show, Earls Court. Gas Council exhibit.

Dec. 10.—Eastern Juniors: Visit to works of Bratt Colbran & Co., Ltd., Lancelot Road, Wembley.

Dec. 12.—Scottish (Western Juniors): Film night; 'Construction of a new gasholder at Alloa Gasworks,' D. C. Dow, Alloa.

Dec. 12.—London Juniors: Address by J. S. Barnes, LL.B., Solicitor, North Thames Gas Board, 178, Edgware Road. 6.30 p.m.

Dec. 13.—Manchester Juniors: President's Day, Visit to Salford Undertaking.

Dec. 13.—Western Juniors: Visit to Torquay works; 'Mains Extensions in relation to Housing Development,' R. Pratt, Taunton.

Dec. 16.—London Juniors: Alternative evening visits. 8.30 p.m. Newspaper Offices:—*The Times,* and *Daily Graphic.*

Dec. 16.—Midland Juniors: 'Use of Gas in the Manufacture of Pottery,' K. Davis, Stoke-on-Trent.

Dec. 16.—London and Southern Section, I.G.E.: 'The Supply, Transport and Distribution of Coal to the South Eastern Gas Board.' A. G. Gostelow: 17, Grosvenor Crescent, S.W.1. 2.40 p.m.

Dec. 18.—Institution of Heating and Ventilating Engineers: Joint meeting with Institute of Fuel, East Midlands Section, at 6.30 p.m.; 'Plant Control through Instruments,' J. E. O. Breen.

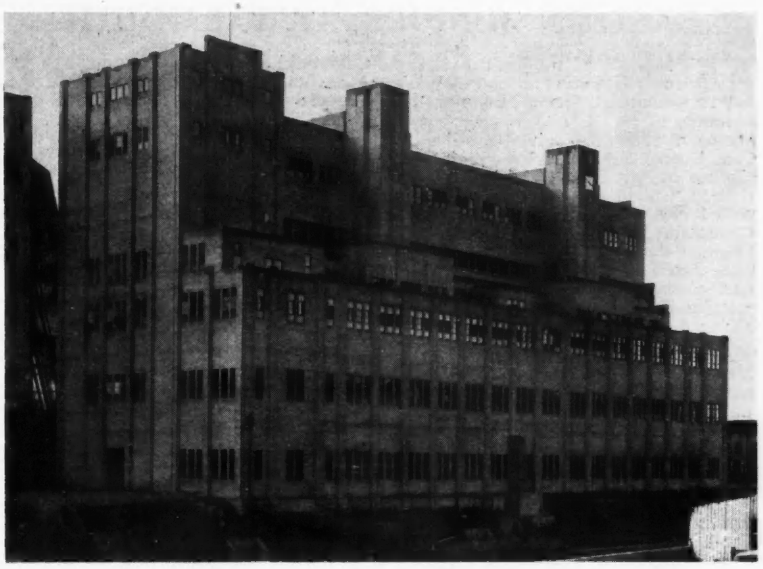
THE PRICE OF ALUMINIUM at the mills has been increased by 1d. per lb. This move follows a rise in October from £157 to £166 per ton paid by the British importers. The increase then announced by the Ministry of Materials was due to the appreciation of the Canadian dollar.

NEW W-D VERTICAL PLANT AT BATH

THIS new installation consists of 56 82-in. major axis lambent heated Woodall-Duckham continuous vertical retorts arranged in two benches, built in line, each of 28 retorts. The installation is capable of carbonising approximately 400 tons of coal and of producing over 7 mill. cu.ft. of 460 B.Th.U. gas daily from a mixture of Derbyshire and Yorkshire coals. Provision has been made for a further bench of 28 retorts, which would raise the daily gas output to over 11 mill. cu.ft.

Two batteries each of five W-D step-grate producers are provided, one for each bench. Any four producers in one battery are capable of supplying the needs of 28 retorts when using run-of-retort coke, and the remaining producer can be shut down without affecting the working of the others. Each battery is provided with an Askania producer gas pressure regulator with duplicate pump units, one motor and the other steam turbine driven.

The coal handling plant is capable of dealing with 100-tons per hour.



External view of the new continuous vertical retort installation at Bath.

All coal is railborne and is discharged into a coal receiving hopper of over 25-ton capacity by a Strachan & Henshaw 'Rotaside' wagon tippler, capable of dealing with the new 24½-ton wagons.

There are four horizontal fire-tube induced draught waste heat boilers, with a working pressure of 120 lb. per sq. in. Each is large enough to deal with the waste gases from 16 retorts and each is provided with an electric motor driven induced draught fan. A superheater capable of adding a superheat of 100°F. is provided for each boiler and, after meeting the requirements of the new carbonising plant, there is available some 7,600 lb. per hour of superheated steam.

The retort house is a steel-framed brick-panelled structure, designed to harmonise with the City's buildings. A special light-coloured brick was selected for the building, which tones well with the stone of Bath, and all external faces of steelwork are brick-encased.

Within the retort house there are a number of separate houses of glass and steel construction, which enclose the switch board, lift motor, liquor pumps, boiler feed pumps, etc. There are also a messroom, locker room, and wash rooms with shower baths for the operatives. A dust extraction plant removes dust during the coke discharging operation.

PRESENTATION TO MR. T. C. BATTERSBY

REMINISCENCES of the International Gas Union congress in Brussels last June formed the chief item on the agenda for a general meeting of the Eastern Section of the Institution of Gas Engineers at 17, Grosvenor Crescent on November 13, under the chairmanship of Mr. F. A. Rhead (Peterborough). Mr. Rhead extended a special welcome to Mr. G. E. Anderson (Newcastle), Chairman of the North of England Section, who in reply expressed the greetings of the members of his Section.

The election of the following new members was confirmed: W. D. Cheshire (A. G. Sutherland, Ltd.); H. A. V. Nickerson (Letchworth); G. Hudson (Gainsborough); W. W. Paterson (Chelmsford); and T. W. Benstead (Clacton).

The CHAIRMAN then presented a picnic case to Mr. T. C. Battersby, immediate past Chairman, in appreciation of his valuable services to the Section. Mr. Battersby had, said Mr. Rhead, been with the former Watford and St. Albans Gas Company since 1922, becoming in due course General Manager and Chief Engineer and subsequently a Director, and eventually Divisional General Manager of the Watford Division of the Eastern Gas Board. As a very humble member he first came into touch with him under his chairmanship of the Gas Engineering Advisory Board, and he soon formed the highest opinion of his abilities. He was Chairman of the London and Southern Section of the Institution in 1950-51, and followed on as Chairman of the Eastern Section in 1951-52. He had been well and ably backed up by Mrs. Battersby and his year of office would long be recalled as an outstanding year in the history of the section.

Mr. BATTERSBY briefly acknowledged the presentation, remarking that he had felt it appropriate to select something which he could share with Mrs. Battersby and which she too would appreciate. He thanked the Secretary, members of the Management Committee, and all who had helped him during his year of office.

The CHAIRMAN then outlined the programme for the 1952-53 session, comprising a short paper meeting in London on February 19, a visit to the Peterborough gasworks on April 15, and the annual general meeting at Clacton on June 15 and 16.

Papers on 'Some Aspects of the International Gas Union Congress in Brussels, 1952,' were then given by Mr. D. B. PARKINSON, M.A., Area Liaison Officer, Eastern Gas Board; Mr. D. W. AULT, B.SC., Divisional Engineer, Lincolnshire, East Midlands Gas Board; and Mr. W. A. EVETTS, M.C., Divisional Engineer, Watford, Eastern Gas Board.

The CHAIRMAN, in introducing the authors, said only a small proportion of the members had been privileged to attend the Brussels meeting and it was deemed fitting that three of their number who had attended should be invited to pass on some of their impressions. Mr. Evetts had undertaken to organise the series of short papers. Mr. Parkinson would provide a general picture; Mr. Ault would deal with the gastronomical side of things and incidentally with the more serious question of the manufacture of asbestos pipes; and finally Mr. Evetts would deal with the works side, concentrating on complete gasification. Our report of the papers and discussion will be published in a later issue.

A vote of thanks was accorded to the three authors on the proposition of Mr. F. T. BROOKES, Divisional General Manager, Tottenham.

EASTERN JUNIORS AT YARMOUTH

MEMBERS of the Eastern Junior Gas Association met at Arnolds Restaurant, Great Yarmouth, by invitation of Mr. R. A. Weston, General Manager, Norwich division, Eastern Gas Board. Mr. G. Davies, in the absence of Mr. E. H. Winch, President, 1951-52, was in the chair and was supported by Mr. J. H. Dyde, Deputy Chairman, Eastern Gas Board. Mr. Davies inducted to office the new President, Mr. J. Anderton, and in doing so read a message from Mr. Winch expressing to Mr. Anderton good wishes during his presidency.

Mr. Anderton thanked Mr. Davies, Mr. Winch, and the members, following which Mr. R. W. Hilham (Hon. Secretary) presented the accounts for the year ended June 30, 1952, which were adopted on the motion of Mr. H. Stanley (Cambrige), seconded by Mr. S. Halls (Cambridge). Mr. Hilham proposed that five guineas be donated to the Institution of Gas Engineers' Benevolent Fund.

Mr. Dyde then presented awards to Mr. S. C. Porter for the paper he presented at the June meeting of the Institution, and to Mr. R. F. Robinson for his paper to the Eastern Junior Gas Association (*Gas Journal*, December 5, 1951, p. 626).

Mr. Anderton delivered his presidential address, a vote of thanks being accorded him on the proposition of Mr. F. J. Denny.

Following the business meeting luncheon was taken at the invitation of the Eastern Gas Board.

Mr. DYDE, proposing 'The Eastern Junior Gas Association,' mentioned that it was the youngest of the junior associations, but he felt that it could claim, in the short period of its existence, that it had established itself as a worthy and worthwhile organisation. It had justified the hopes and aspirations of that small body which gathered together in Cambridge under the chairmanship of Mr. Hunter Rioch, and established the Association in 1946.

If they looked at the membership, it could be divided into three groups:—(1) Qualified juniors who assisted senior officials. (2) Juniors, who came along as youngsters, and were in the process of training. (3) There was a third class, which, for the want of a better name, he would describe as N.C.O's. The N.C.O's. of the industry were the supervisory classes who controlled a group of men or certain functional operations, perhaps under the control of some senior technical officer or senior divisional officer. They were, in his view, some of the people in the industry who had not an association, and should have an Association like this.

The PRESIDENT replied to the toast.

Mr. A. D. DUXBURY (Peterborough), in proposing 'The Eastern Gas Board,' commented that since vesting date the Association had been the guests of the Eastern Gas Board on three Presidents' Days, and it could not be too strongly emphasised how much the Association owed to the Eastern Gas Board for the success of its meetings. The Association's area was largely the same as that of the Eastern Gas Board, and, of course, the greater part of the members were drawn from the Board. It was a great privilege for him to be able to thank Mr. Dyde, on the Association's behalf, for that support, and he asked Mr. Dyde to convey to Sir John Stephenson and the members of the Eastern Gas Board the thanks of the Association.

Mr. R. A. WESTON (Divisional General Manager, Norwich Division) replied to the toast. He said the usefulness of the Association was evident when one read the technical Press and saw the quality of the papers. The gas industry in the future would have to rely mainly on increased technical efficiency, and it looked in this direction to the activities of the junior associations.

Long Service Awards

THE recent Glover & Main sales conference was the occasion of the presentation by the Chairman, Colonel W. R. Glover, C.M.G., D.S.O., of gold watches to three members of the staff who each completed over 50 years' service and are still actively employed. The recipients were:

Mr. G. J. H. Scetrini, Chief Engineer. Thomas Glover & Co., Ltd., joined the engineering shop in 1900; in 1915 he was in charge of the machine shop; in 1922 was transferred to the works office as assistant to the general manager, and later to his present post.

Mr. A. M. Macpherson, Commercial Manager, Thomas Glover & Co., Ltd., joined the office staff in 1900 and filled a variety of posts; appointed confidential clerk and assistant secretary about 1913; after four and half years with the army he returned to the works, and in 1922 took over control of works office staff; appointed to present post at the end of the war.

Mr. H. Macpherson, representative in South Scotland for R. & A. Main, Ltd.; joined Mains in 1902, and did a lot of work in connection with exhibitions; about 1908 he was transferred to the commercial and sales side, and in 1916 became representative for the South of Scotland, which position he has now held for 36 years.

Green for Beauty.—As gasholders in the Darlington division of the Northern Gas Board become due for repainting they are to be painted green with aluminium bands. This step is being taken in an endeavour to merge them into the surrounding rural countryside. Hitherto they have been painted in red oxide paint. Mr. F. Wilson, Darlington Divisional General Manager, believes that their appearance in a green coat of paint will make them much more pleasing to the public eye.

CLEAN FOOD

Ascot Gas Water Heaters, Ltd., staged an exhibit at the Clean Food Exhibition at Greenock. The Ascot organisation is keen on co-operating with local authorities who organise clean food campaigns, confident that the instantaneous gas water heater is in nearly every case the most satisfactory answer to the problem of hygiene in the shop, canteen, or domestic kitchen. In the photograph Miss Sheila Sinclair is seen giving a demonstration.

YORKSHIRE JUNIORS ANNUAL MEETING

ADDRESSING members of the Yorkshire Junior Gas Association at the annual general meeting at Leeds recently, Mr. G. E. Currier, O.B.E., President of the Institution of Gas Engineers, suggested that the Association might re-consider its rules which excluded members of contracting firms from joining the Association. 'The Institution of Gas Engineers,' said Mr. Currier, welcomed members of contracting firms, provided they had the necessary qualifications, and looking back he could name Sir Frederick West and Dr. Harold Hartley who had both occupied the Presidential Chair of the Institution, and many others who had served on the Council. Mr. Currier urged the Association to reconsider their rules because he felt they were losing by excluding this type of member.

After the formal business of the meeting was completed, Mr. Hartley presented the Clayton Award to Mr. F. S. Charnley for his paper 'Some aspects of Distribution Control as applied to Interlinked Undertakings.' A new award, a Silver Medal, offered by Clapham Bros., Ltd., was presented on behalf of the firm by Mr. Clapham to Mr. H. Firth, for his paper, 'The Gas Grid.' The Short Paper Prize, given by Mr. Firth, was presented to Mr. R. Pestell for his paper 'An Unusual Repair to a 4½ mill. cu.ft. Gasholder.'

The following office-bearers were elected for the year 1952-53:

President: C. G. Broome (Wakefield).
Junior Vice-President: D. C. Henderson (Leeds).
Hon. Sec. and Treasurer: G. E. Banks (Sheffield).
Assist. Hon. Sec. and Treasurer: I. Marshall (Huddersfield).
Members of Council: J. E. Brandon (Sheffield); E. S. Carter (Huddersfield); O. G. A. Hoffman (Harrogate).

A paper entitled 'The Industrial Load' was read by Mr. J. M. McLusky, General Manager, Wakefield group, North Eastern Gas Board, an extract of which has already appeared in the *Gas Journal*.

Ten Surpluses—Two Deficits

THIRD REPORTS of the AREA BOARDS

Last week we summarised the third annual report of the Gas Council covering the 12 months ended March 31, 1952. On this and following pages we give extracts from the reports of the 12 area boards, 10 of which made surpluses and two incurred deficits on the year's operations. The reports from all the areas have much in common—a story of dearer gas resulting from increased costs outside the control of the boards, of progress in integration in spite of material shortages, and a slowing down of gas sales attributed to various causes including trade recession, higher temperatures, and the ban on promotional publicity.

WALES

GAS sold by the Wales Gas Board increased by 3.8% from 70.7 mill. therms to 73.4 mill. therms, and consumers increased from 417,837 to 425,759. For every ton of coal carbonised the average yield of coke for sale rose from 7.96 to 8.65 cwt., but the gas yield, as the result of using lower grade and conventionally cheaper coal, fell from 79 to 76.6 therms. Although the Board was not able during the year, as once it had hoped, to conclude long-term agreements to receive increased quantities of coke oven gas, the coke oven gas from outside sources now amounts to 57% of the Board's total sales and the quantity thus taken reduced the Board's coal requirements by about 682,000 tons.

Important sections of the South Wales grid (Eastern section) were completed in time to take supplies of gas from the new Nantgarw coke ovens of the National Coal Board on their coming into production on September 14, 1951. Since that date the Board has taken into its grid system from that source and distributed to consumers in East Glamorgan and West Monmouthshire daily quantities of gas varying from 5 mill. to 9 mill. cu.ft. New constructional work proceeded on the new plants at Maelor, Wrexham, which it is anticipated will begin production next spring, and at Port Talbot.

In January the Board introduced at Whitland for the first time in Great Britain a butane/air gas supply which has operated most efficiently but which commercially has yet to justify its extension. The report adds: 'If the commercial difficulties can be overcome it offers great promise for future development.'

The Board's gross revenue for the year of £7,119,368 was not less than sufficient to meet its expenditure of £7,013,329, which included interest payments of £357,996, and depreciation charges amounting to £367,684. The excess of total revenue over total expenditure amounted to £106,039, from which was set aside £75,000 for replacement and obsolescence reserve and £25,000 to reserve fund. There remained at the end of the year an addition to the carry-forward of £6,039, bringing the total carry-forward to £73,648. There have been three general increases in the price of gas, and the Board says there is mounting evidence that the price which has now to be charged to the consumer has reached a level which tends to restrict the full use of gas by all classes of consumer.

Rising costs, hold-up of grid schemes, and over-dependence on and threatened increase in the price of coke oven gas inevitably create for the Board unsettled conditions which do not lend themselves to the introduction of a general standard tariff.

In its conclusion the Board says its grid scheme is capable of completion within the next five years provided the necessary materials and capital authorisation are forthcoming.

Mr. T. Mervyn Jones, Chairman of the Board, gave a broadcast talk on the report a few minutes after its general release and later the same evening Mr. A. Ifan Jones, M.B.E., General Manager of the Holyhead undertaking and Chairman of the Anglesey group, broadcast in Welsh in the Welsh News feature. As in previous years a popular illustrated version of the report—one in English and one in Welsh—was distributed free to employees, members of local authorities, industrialists, etc., giving a month to month picture of the Board's activities through the year.

SOUTH EASTERN

THE South Eastern Gas Board's revenue from gas, coke and by-products, etc., was £36,492,045 compared with £33,633,133 for the previous year. The surplus, less than 1% of the turnover, was £330,119. Of this sum £100,000 goes to replacement and obsolescence reserve, £100,000 is placed to reserve fund, and the balance of £130,119 is carried forward.

The quantity of gas sold was 1.1% more than in the year before. Domestic sales, influenced by the milder weather, were up by ½%; industrial sales rose by 6%. The number of consumers rose to 1,471,229, an increase of 16,539.

About 18,600 houses were completed and 92% of them had gas supplies, some being built where no gas is available. Freedom of choice for cooking is now the general rule throughout the area, and gas cookers were chosen for 85% of the houses with gas supplies that were completed during the year. Of these new houses, 43% were fitted with gas ignited solid fuel grates.

Since 1949 costs outside the control of the Board—mainly for raw materials and wages—have risen by about £6 mill. a year. Higher returns on coke, tar, etc., have brought in £1,400,000 a year leaving £4,600,000, equivalent to 4d. a therm of gas sold, still to be found. Increases made in the price of gas since 1949 are estimated to produce an average of 2¼d. a therm so that it has been possible to save extra costs of 1¼d. a therm from being passed on to consumers. Increased sales of gas and appliances, and economies and improvements in efficiency have greatly helped to achieve this.

Sales of appliances were generally maintained during the year. Although publicity had to be restricted, consumers with older and less efficient cookers were given every opportunity to replace them with new ones.

The quantity of gas made during the year was 299,259,947 therms, which was about 40,000 therms more than in the year before. The amount of coal carbonised was greater by 76,000, but as a result of higher yields and savings in fuel consumption, 85,000 tons more coke and 8,000 tons more coke breeze were made available for sale. These improvements in the thermal efficiency of gas-making represent a saving of 34,000 tons of coal, or put another way, the same quantity of gas was produced with the use of 10 mill. therms less of raw material. This higher efficiency has been achieved by continuous effort at all manufacturing stations and mostly without major plant reconstruction.

The laying of interlinking mains has made it possible to close down the

five small works at Edenbridge, Sandwich, Cranbrook, Hawkhurst, and Tenterden. Supplies to these districts are now given from East Grinstead, Deal, and Maidstone. Another main laying scheme for transferring gas between the four gas manufacturing stations in Thanet was completed during the year.

Shortage of steel is hindering the carrying out of plans for replacing old plant with new manufacturing plant built on selected sites. Early in 1951 steel became very scarce and it was almost impossible to place forward orders. The distribution of the available steel among the new schemes in hand is being arranged so far as possible to allow those which are well advanced and are urgently needed to be completed, even though this means holding up other schemes for a longer time. In some places it has not been possible to build enough manufacturing plant to keep pace with the increase in the demand for gas, and the slowing-up of construction may make it difficult to maintain supplies if there should be prolonged cold winter weather.

During the year the m.v. 'Sydenham' and the m.v. 'Croydon' were added to the fleet of colliers, making a total of 15 ships owned and operated by the Board. The total carrying capacity is 38,100 tons. Most of these ships can discharge at the Board's riverside works at East Greenwich, Rotherhithe, or Wandsworth. Before nationalisation, two undertakings had their own coal and shipping departments and the single department formed by the Board, with no increase in staff, not only covers their work but arranges the buying and delivery of coal for the area as a whole. It is estimated that the new arrangements will save £143,500 a year compared with the arrangements existing before vesting date.

One of the most valuable features of co-partnership was the opportunity which was provided by co-partnership committees for managers and employees to discuss together questions of common interest. The Board in its last report expressed the hope that the joint consultative committees which were to be set up would be able to carry on this tradition of consultation which had proved of so much value in the past. Fifty-seven of these committees have been formed and 233 members elected by the employees are serving on them. A similar number of representatives have been appointed to these committees by the Board. The committees have made a good start and there is every reason to believe that this form of consultation will help to promote good feeling among employees generally and assist in improving the efficiency of the Board's service to the public.

A comprehensive programme for training and education has been approved by the Board. It includes in addition to the existing schemes for the training of gas fitters, schemes of apprenticeship, and more advanced technical and scientific training to enable suitable employees to qualify as gas engineers or chemists or in other branches of engineering and technical work.

EXTENSIONS to the grid are proceeding, and the Mill Hill gasworks has been linked to it, while Windsor, where the gasworks was closed at the beginning of the year, is now fed from the grid through Slough. The technical efficiency of the gasworks continues to improve, and further additions to the plant have been made, both at Beckton and at Southall. In each case the new installation is of advanced design and should help the Board to meet its supply obligations.

On the commercial side all the 18,000 new dwellings built by public authorities in the area and occupied during the year have been provided with a gas supply, and 85% of the tenants have chosen gas for cooking.

The continuously rising costs forecast in last year's report made it necessary to increase the price of gas on two occasions during the year, in each case by 1½d. per therm. These increases raised the flat rate figure from 16.1d. per therm at the beginning of the year to 19.1d. per therm at the end of it.

For the future a further factor must be taken into account—namely, the shortage of steel, which is seriously delaying the erection of new plant, and threatens to affect maintenance of that already in to affect maintenance of that now in use. On the district the Board is faced with the prospect of a shortage of materials for the installation of appliances.

There is a net surplus of £186,097 on the year's working.

The installed production capacity at the end of the year stood at:—

	Installed capacity in mill. cu. ft. per day, March 31, 1952
Coke ovens	30.00
Horizontal retorts	105.96
Continuous vertical retorts	70.80
Intermittent vertical retorts	23.50
Carburetted water gas plant	137.85
Blue water gas plant	7.50
Oil gas plant	3.00
	378.61

NORTH THAMES

No new plant was authorised by the Board during the year, but plant ordered or building by March 31, 1952, comprised:—

	Capacity in mill. cu. ft. per day
Battery of coke ovens (Beckton)	7.5
Continuous vertical installation (Bromley)	7.5
Continuous vertical installation (Kensal Green)	5.0
Carburetted water gas sets (Beckton)	27.0
Carburetted water gas sets (Southall)	12.0
Oil gas installation (Southall)	1.5
	60.5

In two or three years the resulting delay in changing over gas production to more efficient units will begin to affect the economics of production, and moreover the ability to meet the demands of consumers, particularly at peak load time, will be prejudiced. Once the cut in steel affects the repair and maintenance of existing plant there will be a fall in efficiency and a rise in the cost of production.

During the year 4,851,699 tons of coal were carbonised and the manufacture of carburetted water gas required 27,712,656 gal. of oil and 316,036 tons of coke; peak load oil gas manufacture took 225,480 gal. of oil. In all 409,740,413 therms of mixed gas were made (after benzole extraction had been deducted), while 3,143,548 therms of crude coke oven gas were bought from the Ford Motor Company, Ltd., and 172,617 therms of purified gas from adjacent gas boards.

Greater technical efficiency in the operation of carburetted water gas plants has resulted in an increased yield of gas to the extent of 4 therms per 100 gal. of oil—by no means a negligible figure on a total usage of 28 mill. gal. per annum. In addition, the overall efficiency of gas production has been improved as a result of the attention paid to the modernisation of steam raising and power producing plant.

The yield of gas was increased by 0.6 therms per ton of coal carbonised. This was notwithstanding that there was a further deterioration in the quality of coal received, the inert content of that from the Durham field having increased from 10.7% in 1951 to 11.3% in 1952, and of that from Yorkshire from 9.8% to 10.3%.

The number of consumers and sales of gas continued to increase, with a tendency of prepayment consumers to transfer to credit supplies. The figures for the gas load were as follows:—

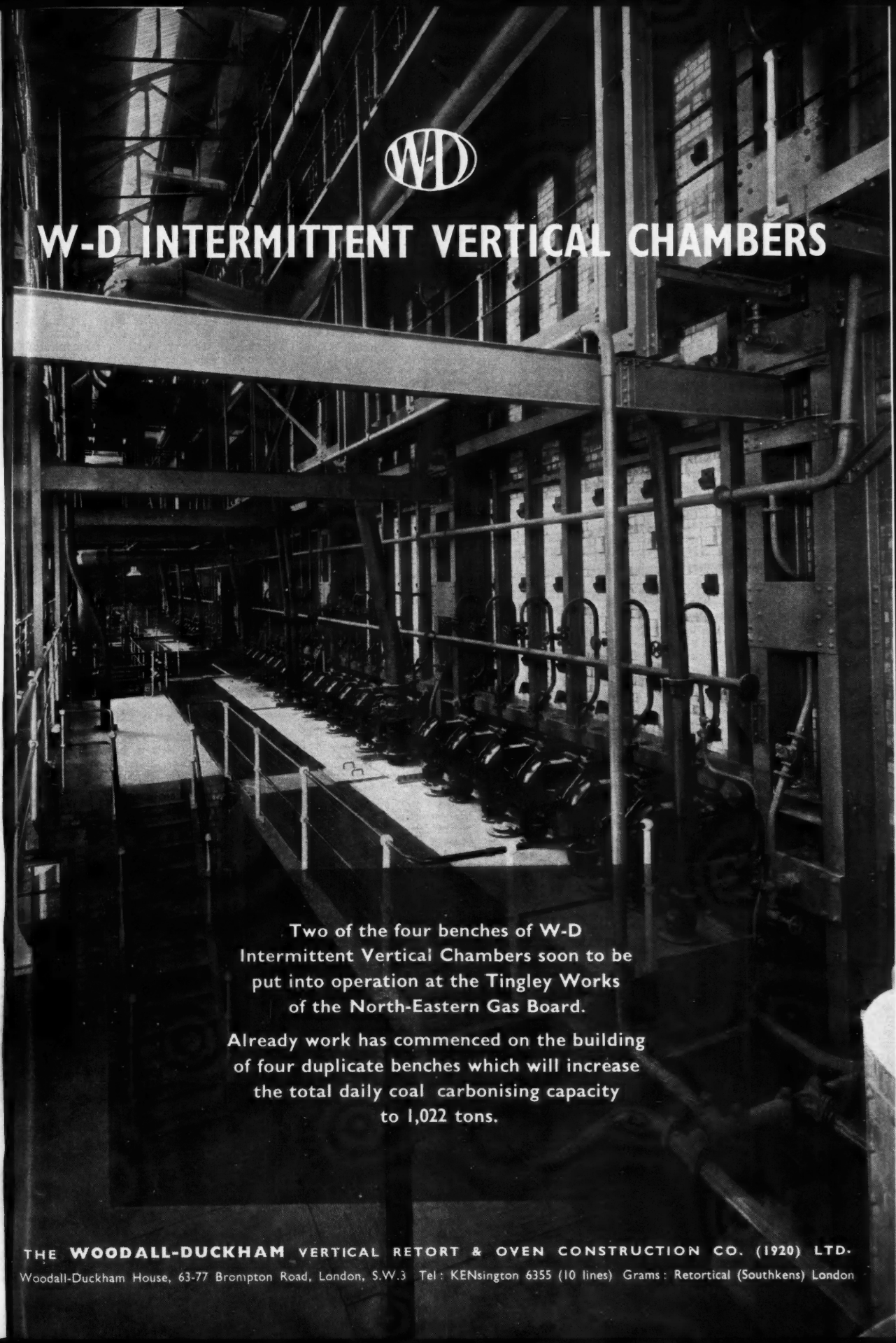
Class of Business	No. of Consumers	Therms sold
Domestic and small commercial supplies:		
Credit	459,496	80,727,264
Prepayment	1,204,608	136,931,593
Industrial	32,160	75,376,717
Other supplies, including commercial	95,751	76,902,389
Public lighting	—	5,779,014
	1,792,015	375,716,977
Sundry processes, departments and used on works		17,641,723
		393,358,700

Sales of gas for industrial purposes increased by 10.7% and for commercial purposes by 5.1% during the year.

The 'London' cooker has proved outstandingly popular and has enhanced the prestige of gas cooking, but the continued shortage of materials has severely restricted its production. A further 56,000 old black cookers were replaced by vitreous-enamelled ones during the year, but in certain classes of business, such as that of water heating, replacement was adversely affected by a combination of factors, including high first cost, shortage of fixing materials and purchase tax.

In regard to tar products, a new development of universal interest is the supply of gammapicoline, a coal tar derivative needed for the preparation of the new drug isonicotinic acid hydrazide used for treating tuberculosis.

(*Area Board Reports continued on page 446.*)



W-D INTERMITTENT VERTICAL CHAMBERS

Two of the four benches of W-D Intermittent Vertical Chambers soon to be put into operation at the Tingley Works of the North-Eastern Gas Board.

Already work has commenced on the building of four duplicate benches which will increase the total daily coal carbonising capacity to 1,022 tons.

THE **WOODALL-DUCKHAM** VERTICAL RETORT & OVEN CONSTRUCTION CO. (1920) LTD.

Woodall-Duckham House, 63-77 Brompton Road, London, S.W.3 Tel: KENsington 6355 (10 lines) Grams: Retortical (Southkens) London

AREA BOARD REPORTS

NORTH EASTERN

GAS sales in the North Eastern area totalled 147,465,913 therms, an increase of 3,883,494 over the previous year. Sales of gas to domestic consumers fell, however, by 826,846 therms, the net gain being due to the increased industrial load. Revenue from gas sales was £8,110,248. Sales of by-products yielded £3,712,748 and sales of appliances £1,384,756. The number of consumers at March 31, 1952, was 845,922, being an increase of 4,248 over 1951. The average price of gas increased by 0.95d. per therm over 1950-51.

The accounts show a deficiency of £31,311, caused mainly through rising costs of coal and materials, transport charges, wages and salaries, amounting in total to an additional expenditure of £1,005,000. The deficiency having been deducted from the 1950-51 surplus of £45,583 leaves a net surplus of £14,272 to be carried forward to 1952-53.

A new block tariff was introduced. Some 500 different tariffs, in a number of instances complex and confusing, were abolished. The new tariff became operative for the majority of consumers last February and provided for a uniform block rate of charge and the dividing of the area into three zones with differential prices in each zone, based on the delivered price of coal, for the abolition of meter rents, a discount of 5% on gas accounts paid within 28 days, an additional 1d. per therm for the first 100 therms per annum in respect of pre-payment consumers, and a minimum payment per quarter based on the size of meter installed.

New plant completed during the year raised the manufacturing capacity of the Board to 132,496,000 cu.ft. of gas per day. Gas making plant capable of producing 36,466,000 cu.ft. per day was in various stages of construction, of which 14,966,000 cu.ft. per day should be available during the year ending March 31, 1953, subject to the supply position.

The estimated steel requirements of the Board for 1952 were 11,455 tons. The steel made available in the 11 months following the inauguration of the carbon steel distribution scheme was only 4,330 tons. Many contracts will, therefore, be unavoidably delayed or postponed until steel can be made available. Shortage of cast iron pipes, if not improved, will cause hold-ups in the completion of linkage schemes; the effect of this will be to impose an increasing financial burden on the Board.

Total gas made was 23,523,757,000 cu.ft. from 1,511,413 tons of coal; carburetted water gas was 5,558,708,000 cu.ft., giving a total of gas manufactured of 29,082,465,000 cu.ft. Gas purchased from the grid and coke ovens was 4,010,540,000 cu.ft.

Consumers of all classes increased, but while sales to industrial and commercial consumers were greater than in the previous year, there was a reduction in gas sales to domestic consumers, explained partly by the mild winter and by trade recession in certain sections of the textile industry. Gas sales overall were 2.7% above last year.

Experiments have been carried out in co-operation with the West Riding of Yorkshire Agricultural Executive Committee on the use of crude ammoniacal liquor as a fertiliser. A test is being carried out on potatoes at Hensall, near Goole.

The new carbonising plant at Tingley is being equipped with special plant designed to recover phenols, concentrated ammonia liquor and ammonium chloride as saleable products. The final effluent is virtually pure water and therefore acceptable to the rivers board. This crude liquor treatment plant which is near completion is the first of its type to be operated in this country.

An experimental automatic blue water gas plant, with butane enrichment plant, has been designed for use in small districts with demands up to 20 mill. cu.ft. per annum, the intention being to replace small, costly, and inefficient carbonising plant. It was tried out last year at Cleckheaton to provide peak load gas, and the results were promising. A catalytic oil gas plant, which uses heavy oil and produces gas with similar characteristics to coal gas, is being erected at York.

A new experimental purifier of the 'dynamic' type has been installed at Cleckheaton for the removal of sulphuretted hydrogen. Another experimental liquid purification plant is undergoing trials at Ossett.

NORTHERN

THE Northern Gas Board reports that it sold 150,006,936 therms through 4,708 miles of mains to 662,049 consumers during the year ended March 31, 1952. Income from sales of gas amounted to £6,158,937 and from by-products (less charges) to £1,772,269. The trading activities of the Board show a surplus of £483,444 after providing contributions towards depreciation, redemption of local authority loans in respect of assets vested in the Board, British gas stock redemption fund, and writing off to revenue £107,286 in respect of short-lived assets and new services. After meeting interest, taxation, and other charges there was a net surplus of £32,044, of which £30,000 was placed to the Board's reserve fund and the balance of £2,044 carried forward.

A comprehensive scheme of educational facilities has been prepared by the Board and gradual progress has been made in overcoming difficulties of providing training facilities for employees in the small or isolated units. During the year 314 students undertook courses of study in technical, accounting and secretarial subjects. Two separate parties of selected applicants were sent to the Outward Bound Mountain School at Eskdale, Cumberland, for a month's course. Every candidate completed the fairly rigorous training with commendable results, one young man in particular reaching the highest standard in the physical tests. As evidence of the interest aroused in young men of good physique and a generally high standard of ability five of the original candidates are arranging to take a 'follow-up' course in their own time and at their own expense later in the present year.

Although rearmament and other priority demands for constructional materials, especially steel, have slowed down a number of the Board's engineering projects, much has been done to close the gap between the peak demand for gas and the capacity to produce it, so that in the absence of breakdowns and the like consumers may rely upon an adequate service at all times.

The large amount of construction still proceeding is mainly designed to improve efficiency, to increase the present too narrow margin of availability over demand, and to provide for estimated future needs. No new project is approved unless demands for gas cannot be met without it, or unless it promises to reduce running costs sufficiently to pay for itself within its effective life.

Even so, large sums of money have been spent or committed. The interest on payments made during the progress of work and up to completion has, of course, no new earnings or savings to offset it, so that delays, however caused, place a burden upon the Board's resources, a burden increased at a time of rising costs of labour and material, since the longer the construction of anything takes, the greater becomes its total cost. While delays in major plant construction are costly, the inability of current production of cast iron pipe to match the current requirements of new housing may be even more injurious. If this cannot be corrected before the Board's stocks of pipe are exhausted, a proportion of the new houses then being built will be tenanted before gas supplies can be brought to them. Once alternative means of cooking and heating have been installed, it is problematical whether the additional cost of the subsequent provision of gas appliances will be faced, so that the Board's business may sustain permanent damage. To avert this, or at least to postpone it for as long as possible, the Board has sought the co-operation of housing authorities in employing available pipe to the utmost advantage, even though this may involve unconventional methods of gas distribution.

The Board has continued to do everything in its power to withstand inflationary trends by meeting from its own resources as high a proportion as possible of the increased costs which it has had to bear. Having done its best in this direction, there has been no alternative but to recover the balance from consumers, and, to the regret of the Board, gas prices were raised accordingly.

WEST MIDLANDS

AFTER providing £375,000 for taxation, there was a net surplus of £312,870 for the year, compared with £151,480 from the previous year. A sum of £100,000 has been transferred to the area reserve fund. The capital cost of replacing fixed assets is now so greatly increased that normal depreciation is not sufficient. The Board therefore made a further transfer of £200,000 to the replacement and obsolescence reserve, which was opened last year by a nominal contribution of £50,000. Including the balance from the previous year, £181,982 has been carried forward.

The financial results were very favourably influenced by the substantial increase in the price obtained for tar. The average price realised per gallon was over 2½d. in excess of that for the previous year and, as over 50 mill. gal. were sold, the additional net revenue was approximately £600,000. The additional quantity of tar produced was accounted for partly by the increased amount of coal carbonised and by higher efficiency at the gasworks.

The capacity of the gas manufacturing plant was increased by nearly 7 mill. cu.ft. per day, which, with the increases during the two previous years, makes an addition of one-seventh to the capacity taken over. There are now under construction, or authorised, further additions which will add over 82 mill. cu.ft. to the daily capacity.

The rate of progress in the completion of work in hand is much retarded, which is to be regretted because of the outstanding applications for substantial new or increased gas supplies. Moreover, the additional cuts in the allocation of steel have led to further delays. Consequently, as a matter of policy, the Board decided to concentrate its reduced allocation of steel upon those projects which can become gas-making at the earliest dates.

Another result of the slow progress in the installation of new plant is the enforced continuance of manufacture at works which, owing mainly to the poor condition of the plant, have higher costs of operation. This gives rise to complaints from local manufacturers, who assert that their competitive position, in relation to manufacturers in districts where gas can be supplied more cheaply, is thereby worsened. It must, however, be borne in mind that the substantial capital costs of installing new plant at the present level of prices may involve a liability of as much as 3d. per therm, which negatives the anticipated savings, although there may be other good reasons for modernisation.

Carbonising results were good and a further small increase in the average yield of therms per ton was realised. Compared with the yields obtained in the last year before nationalisation, the increase in 1951-52 was equivalent to obtaining the same results from 28,800 tons less coal, equal to a saving, at current prices, of over £100,000.

A uniform tariff structure for all districts in the area was introduced, to operate from the first meter readings after March 31, 1952. Within the standard structure, charges in individual districts are still based on local costs of production. The Board decided to retain a maximum charge which restricts the cost to consumers in a number of districts.

There was an increase in the sales of gas over the previous year of 3.4% (9,873,000 therms), but the increase was partly due to the incidence of Leap Year Day and the fact that there was no Easter holiday in the year. Gas sales in 1951-52 amounted to 14.7% more than in the year before nationalisation.

The mild winter affected the upward trend of gas sales, which were actually lower to domestic consumers in the winter half year than in the corresponding period. Signs of recession in sales to industry were also apparent. Since April 1, 1952, gas output has been 1.4% lower than the corresponding period of 1951.

Coupled with some increase in manufacturing capacity, the reduction in demand enabled the Board to accept some of the proffered loads which had had to be refused, but there are still substantial unsatisfied demands, particularly in Birmingham, the Potteries, and the Black Country.

The outstanding feature of the year in relation to coke supplies was the change from a serious state of deficiency in supplies at the beginning of the year to one of reasonable stocks at the end. The change was brought about by cuts in deliveries in the summer months to ensure a more equitable allocation, by the importation of coke from other parts of the country where surpluses existed, the substitution of low grade opencast coal for use on boilers at gasworks (which released 30,000 tons for sale) and by the mild winter. Sales of coke amounted to 1,109,130 tons, an increase of 22,010 tons over the previous year.

Appliance sales were well maintained and amounted in value to £1,829,218, representing 109,386 appliances.

SOUTHERN

AFTER meeting interest charges of £648,691 and a contribution of £34,232 to the central guarantee fund, the Southern Gas Board's net profit was £140,651, from which £10,000 was placed to a general reserve fund and £50,000 to plant replacement and obsolescence reserve fund, bringing the latter fund to £100,000. Including the balance of £1,097 brought forward from the previous year, £81,748 was carried forward to next year's accounts.

Difficulty was experienced in obtaining the materials, particularly steel, necessary for the erection of new plant and for repairs to existing plant, but a number of important jobs were completed or commenced during the year.

The gas supply position in Oxford and surrounding districts continued to cause the Board grave concern. While good progress was made in connection with the installation of a new carburetted water gas plant at the south bank works and the main to enable supplies of gas to be sent from Reading to Oxford was completed at the end of 1951, these measures are in the nature of palliatives which cannot of themselves solve the problem of ensuring adequate gas supplies to Oxford in the future. In view of the opposition to the Board's proposals for the building of a retort house of modern design on land adjoining the south bank works, the Board decided not to appeal against the city council's refusal of planning permission, and negotiations for the acquisition of a suggested alternative site at Cowley are being carried out directly with the owners. Further cuts in steel allocations during 1952, however, have removed any possibility of being able to build a completely new manufacturing plant with all the necessary ancillary plant in time to relieve the anticipated shortage of gas in the critical period from 1955-56 onwards. While the Board has announced its intention to move altogether from the present site of the Oxford works, both north and south of the Thames, as soon as circumstances permit and present difficulties of removal and of the construction of new gasworks elsewhere can be overcome, it is not possible to give undertakings as to date or to announce a definite timetable.

During the year 122,172,120 therms of gas were made, a decrease of 122,243 therms on last year's figure. In the manufacture of carburetted water gas 8,054,459 gal. of gas oil and 96,881 tons of coke were used.

The policy of providing bulk supplies from large manufacturing stations to small works was continued, in an endeavour to eliminate uneconomic units and to provide a more efficient supply of gas to consumers in the districts affected. Although the Board's plans were limited by shortages of cast iron and steel pipes, it was possible to connect Titchfield and Chichester with Portsmouth; Wallingford with Reading; Basingstoke and Midhurst with the Aldershot/Farnham link; Chipping Norton and Bicester with Oxford; Buckingham wtih Winslow; and Adderbury with Banbury. Nine small works were closed, making a total of 15 closed since vesting date.

Gas sales totalled 112,410,000 therms, a decrease of 1.12% compared with the previous year. The number of consumers served was 554,958, an increase of 10,113.

After examination of the financial implications of higher costs, the Board reluctantly decided that in spite of the economies which had been made there was no alternative but to raise the price of gas by an average of approximately 2d. per therm over the area as a whole.

At the same time, the opportunity was taken to formulate a new tariff structure based on progressive blocks, with standardised tariff steps giving reductions in price according to the quantity of gas consumed irrespective of the purpose of its use. After receiving the assent of the Southern Gas Consultative Council, the new tariffs and prices were put into effect last March.

Coke sales totalled 500,742 tons, showing an increase of 20,037 tons, or 4.1%, and relatively few complaints of shortage were reported. To bring to the public notice, particularly in the rural areas, improved coke-burning appliances, a coke exhibition vehicle was put into service.

The Board expresses the view that every possible economy and improvement in efficiency must continue to be made if a period of reasonable stability in gas prices is to be attained, but unless the upward trend of costs is halted, past and future achievements in economy of working may be nullified to the detriment of the Board and the consumer.

Looking back on the year's work, shortages of vital material, ever-rising costs and restrictions on capital expenditure made for limited progress, while delays in the delivery of materials involved additional expenditure which was not foreseen. The Board is proud that under such adverse conditions so much has been accomplished, and thanks are conveyed to all employees at all levels. Further development must to an extent wait upon supplies of steel, cast iron, etc., difficulties in respect of which have been accentuated since the preparation of the report.

SCOTTISH

THE productive capacity of many Scottish undertakings has been increased by the introduction of new plant or by the replacement and repair of existing plant, while the distribution systems have been considerably improved. The policy of merging production and management of smaller works in larger undertakings has been followed where reconstruction of plant was required and where its cost was out of proportion to the benefits to be derived from linking the undertaking with a neighbouring centre. Office and showroom facilities have been extended and in some cases existing facilities were improved.

Gross income was £20,703,196 and gross expenditure £20,668,252, giving a surplus of £34,944, reducing the deficit carried forward from £129,351 to £94,407. The Board had hoped the deficit would be wiped out, but while income fulfilled expectations, particularly in respect of the sale of by-products, there were large increases in expenditure. Gas sales totalled 203.7 mill. therms against 204.9 mill. therms in the previous year, and the average price received was 13.5d. per therm compared with 12.5d.

The first three years have served to evolve general lines for development in the future. Much of the plant requires renewal or improvement, and a number of the smaller works cannot be profitably maintained. The distribution system has a host of imperfections to be remedied and the development of housing calls for its extension in various places. Much of the equipment of domestic appliances is out of date; its substantial replacement and expansion would go far to benefit many homes. A good deal of progress has been effected and the Board trusts that the lines laid down will lead to more substantial reform in all these directions. But the shortage of some materials operates against rapid or wholesale change.

In establishing co-operation with other industries, some progress has been made, but much has still to be done. The use of gas and coke has more to offer to Scottish industry, and much depends on close harmony with other industries responsible for fuel, and particularly with coal and electricity. The welfare of the gas industry depends very largely on the supply of coals which are adequate in both quality and quantity, and which are available at a reasonable charge. The welfare of the public depends on a proper use of all the fuels available, and their distribution leaves much scope for consideration. While it is proper that those in all industries should compete to render the best possible service, the maintenance of unrestricted competition for the same tasks is, to a considerable extent, a survival of conditions which are less applicable to industries with a common national ownership.

One direction in which progress has been slow has been the evolution of a good tariff system. The Board had to take over a far larger number of undertakings than any other Board, and these brought an immense variety of price systems. The years of the Board's administration have been marked by rising prices generally, and have thus necessitated the enhancement of charges for gas so that it has not been possible to operate on any stable basis. But the Board hopes that it will be possible to construct a proper general system to which progress can be made as rapidly as is wise and practicable.

The day-to-day maintenance of the industry has needed continuous work, and much has been accomplished to render it more valuable. For its operation and improvement the Board acknowledges the services rendered by those engaged on it. These consist of a large team whose duties vary from productive labour and capacity at the undertakings to work on the roads, from visitation of the houses to service in the offices, from staff work at headquarters to responsibility for administration in many centres. They have shown an increasingly co-operative spirit and are making a valuable contribution to the welfare of the public.

NORTH WESTERN

AS foreshadowed, the North Western Gas Board, second largest of the boards, reports a loss for its third year of operation. The amount of the loss after all charges is £441,352, and with the accumulated deficit brought forward the total deficit now to be made good is £746,125. In its report the Board says that it has chosen to confront a loss in the current year rather than to fix gas prices at levels which would extinguish immediately the whole of the expense of underpinning the prevesting capital structure.

In fixing prices the Board has planned the absorption of this expenditure on extraordinary maintenance progressively instead of in the year in which it has occurred, even though the short-term adverse financial effect of this course has been foreseen. The outstanding deficiency is expected to be recouped within 12 or 18 months when the tariffs introduced in May have had time to have their full effect.

During the year reviewed, the Board carbonised 4,293,146 tons of coal (4.4% more than in 1950-51) and sold 339 mill. therms of gas (2.7% increase) to 1,740,335 consumers through 11,732 miles of gas mains. In addition, 1,605,168 tons of coke (0.5% decrease), 301,608 tons of breeze (16.4% decrease), and 314,633 tons of tar (9.8% increase) were sold.

The coal carbonised cost the Board an average of 69.72s. per ton, an increase of 10.6%, representing an addition of £1,431,764 to the actual coal costs. The average realised price for gas, on the other hand, increased by only 7%, from 11.93d. to 12.76d. per therm.

The yields of gas and other products from the coal carbonised showed a substantial improvement over the previous year's results, thermal efficiency of production increasing by 1.34% with a resultant increase of 1.19 therms of gas and 0.17 cwt. of coke and breeze from every ton of coal carbonised.

The actual yields per ton of coal carbonised were:—

Total gas (including carburetted water gas, oil gas, and producer gas)	84.14	therms
Coal gas only	74.74	therms
Coke and breeze	9.15	cwt.
Tar	14.58	gal.
Crude benzole	0.70	gal.

Of the gas sold domestic consumers took 53.97%, industrial consumers 25.55%, commercial consumers 14.94%, public lighting 2.87%, local government departments 2.15%, and central government departments 0.52%.

The average annual consumption by domestic consumers remained unchanged at 114 therms for prepayment meter users, who constitute more than two-thirds of all domestic consumers, but there was a small reduction in the amount consumed by credit consumers which fell from 113 to 111 therms per consumer. There was a setback in the number of cookers sold to the public, 123,000 altogether being sold as compared with 140,000 in the preceding year.

Coke grate sales at 14,000 represented only half the total reported for the preceding year, and the Ministerial ban on promotional advertising and selling activities is blamed for this. The Board states that the restrictions on hire purchase and credit sales introduced in February this year will, if retained for any length of time, have an increasingly serious effect on appliance sales.

The Board has now completed several of the physical linkage schemes which form part of its long-term plan to establish a great gas grid across the industrial belt of Lancashire and Cheshire. As a result it was possible to close down five uneconomic production stations. The annual net saving achieved through these closures and the operation of a number of production stations on base load (*i.e.*, full capacity throughout the year) is stated at £96,400.

During the year the Board authorised expenditure of £2,186,244 on its distribution system and £9,838,663 on production works.

The accounts for the year show that total income amounted to £28,779,703 and expenditure to £28,138,023, leaving a trading balance of £641,680. Interest, rents receivable and other income added £334,921, making a total credit balance of £976,601. Against this interest charges took £1,262,971, contributions to central guarantee fund £71,185, and financing expenses £83,797, so that a net debit balance of £441,352 was left.

Income was made up as to £18,408,612 from the sale of gas, £9,290,037 from the sale of by-products, and £1,081,054 from the sale, hire-purchase, and rental of appliances.

Of the expenditure £21,045,524 went on the manufacture of gas, £3,234,735 on distribution and consumer service, £1,503,065 on administration and employees' welfare, £1,740,986 on depreciation, and £613,713 on rates.

The balance sheet total amounted to £58,208,685 at March 31, 1952, compared with £45,078,233 a year previously. Fixed assets after depreciation are shown at £33,081,299 compared with £26,600,171 at the end of the previous year. Liabilities included £32,206,326 of British Gas Stock, £6,207,472 compensation due to local authorities, and £1,672,363 mortgage and other loans. Current liabilities totalled £15,717,812.

EASTERN

THE Eastern Gas Board has been able to balance its revenue with its expenditure and has made good the accumulated deficiencies amounting to £247,236, which arose during the period from vesting date to March 31, 1951, leaving a balance on net revenue account to be carried forward amounting to £42,452.

The financial result of 1952 compared with 1951, expressed in pence per therm of gas sold, is as follows:—

	1952 pence per therm	1951 pence per therm
Revenue from sales of gas	17.57	15.42
Deduct revenue expenditure (less receipts from residual products)	17.03	15.74
	+ 0.54	− 0.32

Capital expenditure during the year amounted to £2,490,190. Since vesting date the Board has spent £6,137,358 under this head. The Board is continuing its examination of its administrative machine and considerable economies have been effected.

Schemes for extension and renewal of manufacturing and distribution plant have been approved during the year estimated to cost £2,052,194. The gas production capacity of the Board's works at March 31, 1952, was 134 mill. cu.ft. of gas a day. The total quantity of gas manufactured during the year was 140,072,256 therms compared with 137,587,641 therms in 1951.

The fuel expenditure index improved by 1.2 points.

Completion of the Essex grid scheme has made it possible to concentrate the manufacture of gas at Colchester and thus obtain benefit from the extensions of the carbonising plant at these works. The Colchester station is now the cheapest producing station in the Ipswich division.

Because of the shortage of steel, work in the Tottenham division on an 8 mill. cu.ft. a day continuous vertical retort house, complete with ancillary plant and new coal and coke handling plant, has been held up.

A 2½ mill. cu.ft. a day horizontal retort installation has been completed at Watford, as well as the reconstruction of a 3½ mill. cu.ft. a day continuous vertical retort installation at St. Albans. Bungay and Framlingham are to be supplied with butane/air in place of coal gas.

A sum of £530,645 was spent to March 31, 1952, to provide for the supply and distribution of gas to the five new towns, which are still in the early stages of development. Revenue received from the sale of gas in the new towns was £11,494. The deficiency, after charging cost of manufacture and distribution, and the cost of servicing capital expenditure, was £28,014.

Unaccounted-for gas shows a reduction of 0.09%, from 5.75% to 5.66%.

Sales of gas increased 2.41%, over the previous year.

Gas sales to industrial consumers are increasing at a rapid rate. The average annual consumption of gas by domestic consumers shows a decrease of 3 therms a year. The Board considers that one of the contributing factors to this decrease is the change-over from obsolete to modern and more efficient gas appliances. There was an increase in the number of consumers (8,690) during the year, the total consumers at March 31, 1952, being 679,857.

Seventy-five per cent. of new dwellings completed and occupied during the year were supplied with gas cookers, 63% with gas wash-coppers, 38% with solid fuel gas ignited fires. In the case of converted dwellings, 87% were supplied with gas cookers.

The first 23 months immediately following vesting date were fraught with considerable difficulties. Of the 91 gas undertakings which vested, 44 were incurring losses, estimated by the Board to amount to £241,500; 47 undertakings were estimated to have surpluses on revenue account amounting to £138,000.

The Board has pursued a policy of raising technical efficiencies in the various manufacturing stations, improving its organisation, and has only increased its price of gas to meet increases in current expenses.

SOUTH WESTERN

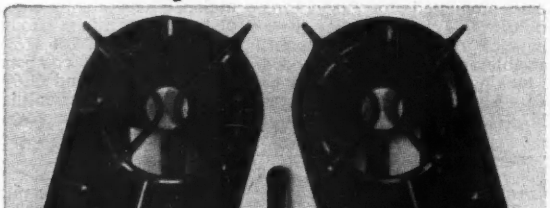
ATTENTION has been drawn in previous reports to the revenue deficiency of approximately £617,000 per annum which the Board inherited on vesting date and to the steps which were taken to reduce this deficiency. Having substantially reduced it over the first two years, at the end of the third year the deficiency no longer exists and has been converted into a slight net surplus of £24,273.

Although to achieve this more satisfactory result and to keep pace with rising costs increases in the price of gas have been inevitable, improved efficiency and savings have enabled the Board to carry practically one-third of all increased costs arising since vesting date, which amount to no less than £2,850,500 per annum. They are due to net increases in the cost of coal, capital charges, rail and sea freights and, as a result of national awards, wages and salaries, all of which added together, are equivalent to approximately 6d. per therm on the price of gas throughout the area. Improved efficiency and economy measures instituted by the Board since its inauguration have enabled the Board itself to carry almost £450,000 a year of these heavy increases. Gas prices have been

(*Continued on page 453*)

An outstanding advance in gas

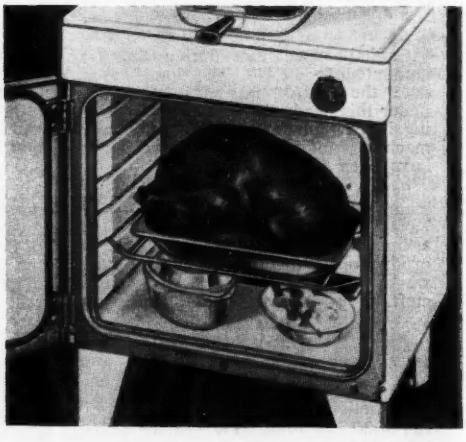
First a hotplate



of ideal dimensions with plenty of space—24″ wide x 19″ deep—having four boiling burners of ample capacity, each with a Fine-control tap with fixed simmering position, and complete with a large-sized grill.

Then an oven

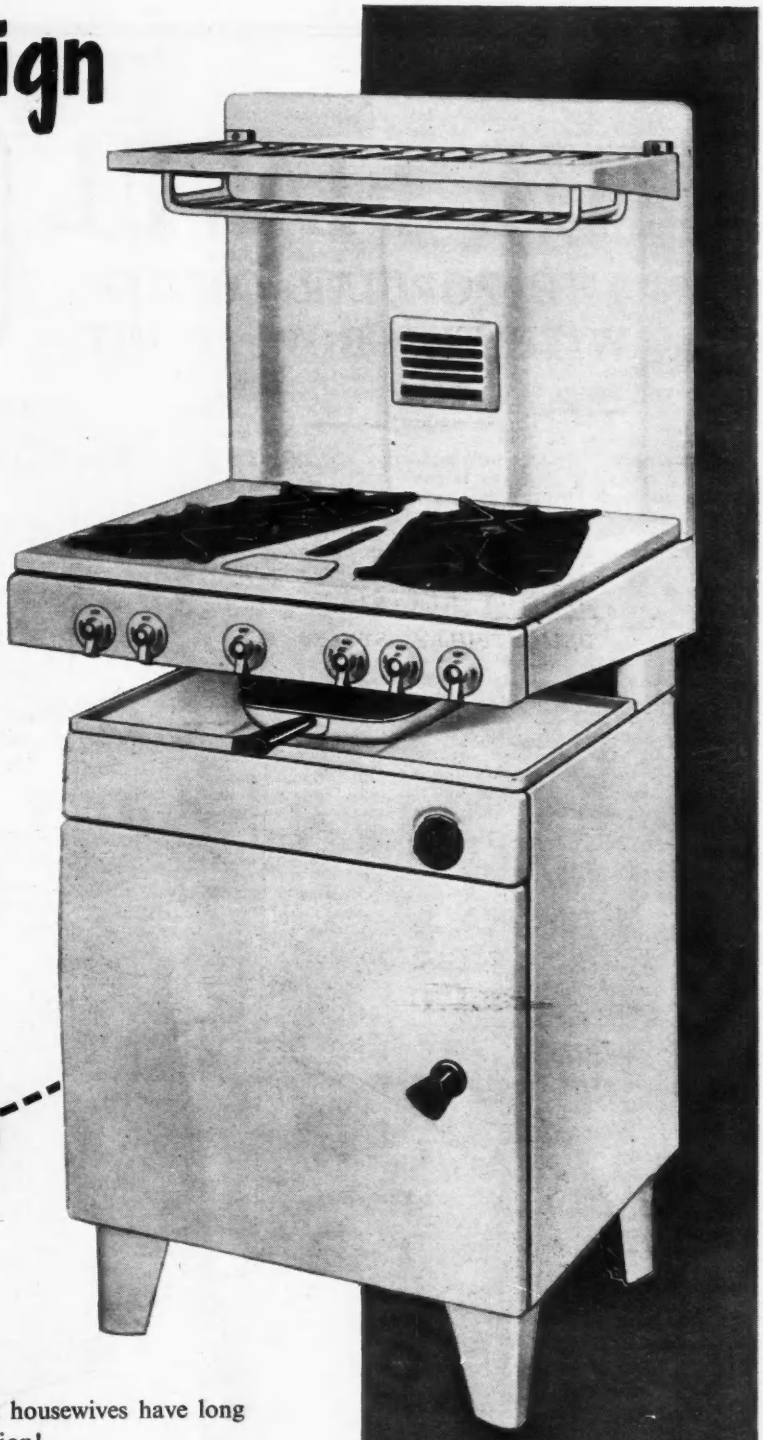
of "just the size" for general use and big enough to cook a 22-lb. turkey at Christmas—it is a single burner air-float New World oven, and it is Regulo-controlled.



RADIATION GROUP SALES LTD., Head Office & Showrooms: 7, Stratford Place, London, W.1. Telephone: MAYfair 6462.

NEW WORLD NEW WORLD NEW WORLD

cooker design



Combined

in a form so attractive that it grows on you the more you see of it; and by the elimination of corners and crevices, the **EIGHTY FOUR** is the easiest of all Gas Cookers to keep clean.

The exterior finish is two-tone cream or green and cream with light coloured oven interior.

The Platerack is hinged and enamelled for easy cleaning.

The forward venting flue enables the cooker to be fitted flush to the wall.

The result

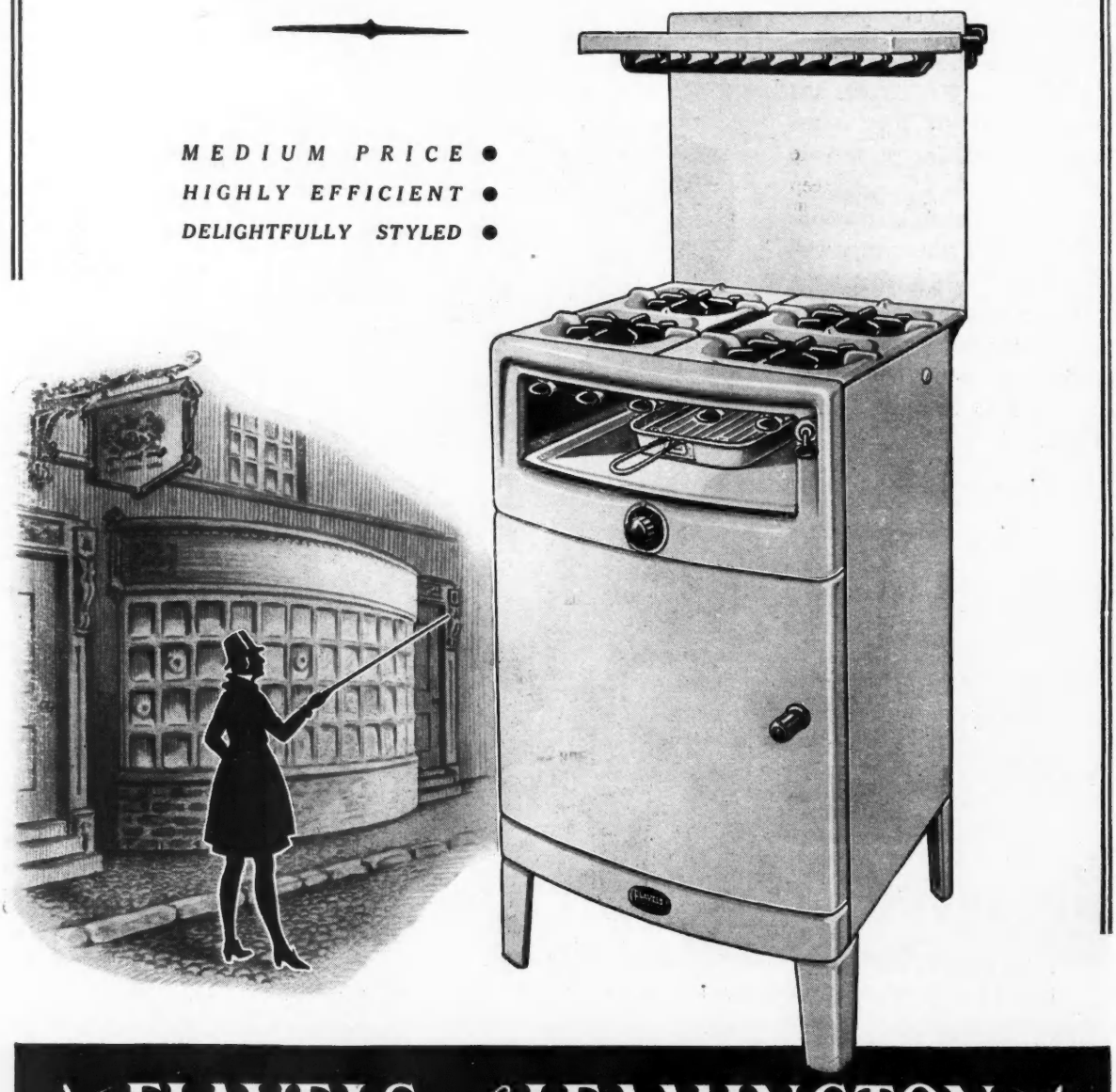
is the **EIGHTY FOUR** Cooker that housewives have long hoped for—and it is in production!

NEW WORLD NEW WORLD NEW WORLD

THE FLAVEL '68'

THE POPULAR COOKER WITH THE BOW FRONT

MEDIUM PRICE ●
HIGHLY EFFICIENT ●
DELIGHTFULLY STYLED ●



FLAVELS of LEAMINGTON

MAKERS OF FINE QUALITY COOKING & HEATING APPLIANCES SINCE 1777

AREA BOARD REPORTS

increased by an average amount of 5.1d. per therm in the area, of which approximately 1d. per therm went towards meeting the initial annual deficiency of £617,000, to which reference has already been made.

Most of the more obvious methods of making quick savings, such as improvements in works practices, bulk buying, and the closing down of some of the smallest and most uneconomic works, have already been effected. The major economies to be made are in the integration of major works (with base load working) and offices, which is a long-term process. Although considerable progress in this direction has already been made, it is now being seriously hampered by the need for re-armament and the consequent shortage of steel and cast iron pipes.

Of the 105 gas producing units taken over by the Board, nine works have been closed down since vesting date and these will be followed by many others as quickly as possible, in order to reduce costs and to give an improved service. Major production projects involving a total capital expenditure of nearly £6½ mill. have been approved by the Board since vesting date, of which nearly £3 mill. has already been spent.

All works in the area are now supplying gas of a declared calorific value, which is a decided benefit to the consumer. This has been achieved by more adequate technical control at some of the smaller works, 51 of which at vesting date supplied gas which had no declared calorific value.

Coal used for the manufacture of coal gas amounted to 1,467,197 tons—an increase of 0.9% over the previous year. There have been substantial decreases in the amount of coke and oil used for the manufacture of water gas, producer gas, and carburetted water gas. Compared with last year, there was a slight decrease in the quantity of gas sold, due largely to the mild winter.

The total mileage of gas mains throughout the area is now approximately 4,638 miles, of which 130.4 miles of new mains were laid or replaced last year. Since vesting date 325 miles of new mains have been laid and 28 miles of mains replaced.

The main development in the Board's long-term integration scheme has been the linking up of the Swindon and Bath distribution systems. This integration has enabled 1 mill. cu.ft. of gas per day to be supplied to Bristol via Bath.

Mainlaying projects involving an expenditure of nearly £4,900,000 have been approved, of which almost £1¾ mill. has been spent since April 1, 1949. Approved projects for new gasholders involve expenditure amounting to over £1¼ mill., of which about three quarters are either completed or in course of construction.

The total number of consumers of all types at March 31, 1952, was 632,201, an increase of 8,414 on the year. Sales of most gas appliances tended to fall somewhat compared with the previous year, due to the general economic conditions, Government restrictions on advertising, and the mild winter which affected the sales of fires and radiators.

EAST MIDLANDS

THE East Midlands Gas Board reports a year of satisfactory progress. Administrative organisation was developed still further; again there was a steady improvement in efficiency of operation on the works and in service to consumers; output continued to increase, and harmonious relations with manual workers and staff were maintained. Financially, the outstanding feature was the steep rise between June and December, 1951, in the cost of raw materials and of services. The year ended with a net surplus of £273,980 after providing £909,039 for depreciation and £635,951 for interest charges.

In the third year the Board laid or renewed 217 miles of mains, installed or renewed 35,743 services to individual consumers, installed 91,407 cookers, 11,398 space heaters, 8,921 water heaters, and 25,889 wash boilers and washing machines, increased its manufacturing capacity by over 12 mill. cu.ft. of gas per day, sold 638,000 tons of coke and breeze, and produced 25 mill. gal. of tar, 84,000 gal. of benzole, and 256 tons of sulphate of ammonia. On the average, operating costs have increased by 28.5% since vesting day.

A new carbonising plant of 6 mill. cu.ft. per day capacity was brought into use at Aylestone Road works, Leicester. Two additional carburetted water gas plants each with a capacity of 4.75 mill. cu.ft. per day were completed and put to work at Neepsend works, Sheffield. Steady progress was made in increasing the thermal efficiency of carbonising plant, resulting in a saving of 20,000 tons of coal over the year. Improvements in engineering and steam raising practice were made at a number of works whereby more coke was made available for sale.

Manufacturing stations were closed down at Clowne, Cudworth, Hathersage, Matlock, Whitwell, Bingham, and Riddings. Progress was made on the Nottingham, Newark, Bingham, Southwell linking main. Approval was given to bulk supply mains from Doncaster to Thorne, Derby to Ashbourne, and Wellingborough to Burton Latimer.

Shortage of steel adversely affected the progress of major projects and deferred indefinitely extension to carbonising plant at Derby and Northampton. Work on the erection of nine gasholders either proceeded at a reduced rate or could not be commenced, thus delaying acceptance of additional load.

In December, 1951, the Board introduced a new standard system of charge. There are now only four domestic and five non-domestic tariffs, as compared with 400 different prices for gas at vesting date.

Increased operating costs incurred since vesting day entirely beyond the control of the Board have amounted to more than £3 mill. per annum. The whole of these increased costs has not been passed on to the consumer. A progressive total, now estimated to be at an annual rate exceeding £600,000, has been absorbed through economies effected by the integration of undertakings, by increased operating efficiency, and by the bulk buying of materials.

Sales of gas increased by 4.3% over the previous year; 44% more cookers were fixed than in the previous year and the majority of cookers fixed in the Sheffield and Rotherham division were for consumers who had not previously cooked by gas. The rate of exchange of obsolete gas cookers averaged 800 per week.

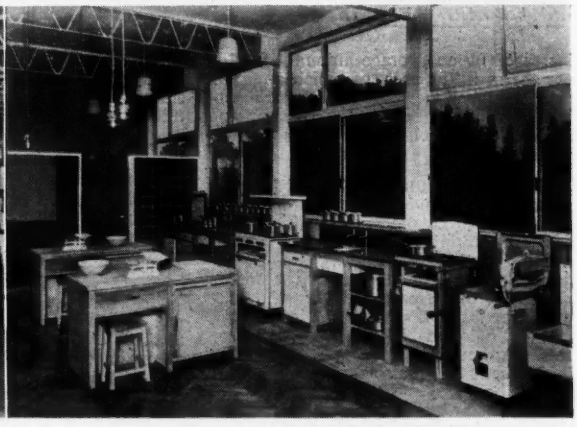
Following the acceptance by the Consultative Council of the standard tariff structure of the Board with effect from December, 1951, the Council received reports from the Board in January and March, 1952, regarding a net annual increase in the Board's working costs of £732,000, which had arisen since the tariff structure had been submitted to the Council in November, 1951. The Council decided to accept the proposals of the Board for a further revision of gas prices.

It was evident from the number and variety of matters which had been considered by the Council and its divisional committees, that the existence and functions of the Consultative Council had become much more widely known to consumers. It was considered that consumers' knowledge of the work of the Council was being acquired mainly through reports of proceedings of meetings of the Council and divisional committees published in considerable detail by the Press throughout the area.

Safety and Factory Efficiency

THE BIRMINGHAM INDUSTRIAL SAFETY Group announces its intention of holding a Coronation Year Exhibition in the Bingley Hall, Birmingham, from June 19 to 26, 1953, inclusive. This will follow the pattern of the highly successful exhibition which was organised in Festival Year and which attracted more than 10,000 visitors in the four days during which it was open. The scope of the exhibition is being extended to cover all aspects of safety, efficiency, and health in industry. The whole of the Bingley Hall has been booked, and to coincide with the exhibition a week-end conference is being organised with emphasis on the theme of training for safety and health.

An attractive brochure dealing with the exhibition has been published and copies of this with any further information may be obtained from Mr. A. G. Cogswell, S.A.F.E. Exhibition Secretary, Fort Dunlop, Birmingham, 24.



MR. THERM IS PROMINENT IN NEWEST LEEDS SCHOOL

THE West Park Modern Secondary School, recently opened at Leeds, is the first post-war school built by Leeds education authority and is notable in that many facilities are provided which have previously been associated only with grammar and high schools.

It is a 'modern' school, not only in the educational sense, but more particularly in its architecture. A visitor is immediately impressed by the airy and light corridors and classrooms, by the delightful colour schemes and by the ingenious use of new materials and building techniques.

There are two domestic science classrooms extensively fitted with up-to-date gas and electrical appliances, adjoining which is a fully furnished and equipped flat in which the girls will be able to practice the domestic and culinary arts. The gas equipment in the domestic science rooms, which includes seven gas cookers, a gas washing machine and a gas wash boiler, two drying cabinets, and a refrigerator, was installed by the Leeds group of the North Eastern Gas Board, under the special hire terms covering the use of gas equipment for educational purposes.

When it comes to providing school meals, Mr. Therm has come very much into his own. Already some 630 children, not to mention staff, are being provided with mid-day dinners, and the cooking equipment is all-gas. It comprises the following: three sterilising sinks, four Vulcan 83 roasting ovens, Radiation 'Chester' 2751 range, Cannon 40 gal. dual-purpose boiler, two Falkirk 40 gal. vegetable boiling pans, and three Newton Chambers steaming ovens.

Talks to Gas Staffs

A SERIES OF LECTURES was recently completed by Mr. J. H. Gibbons, of R. & A. Main and Main Water Heaters, Ltd. His itinerary included the Dundee division of the Scottish Gas Board where three talks on water heating were given to the fitting staff and a lecture on water heating and cooker design to the sales and supervisory staff; the Perth division, where a lecture on cooker installation and regulation and thermostatic control was given to the district staff; the Tottenham division of the Eastern Gas Board, where three lectures on the design, construction, installation, and maintenance of the new Main No. 20 'Century' gas cooker were given to the sales and district supervisory staff; the North Eastern Gas Board area where lectures were given at Harrogate, Leeds, Bradford, and Wakefield concerning storage water heaters and the No. 20 'Century' cooker; and the Thanet division, South Eastern, where lectures were given to fitting and sales staffs.

The Catering Equipment Manufacturers' Association, of which Mr. J. C. Morris (Director of Benham & Sons, Ltd.) is Chairman, recently paid a visit to the assembly plant of the Hobart Manufacturing Co., Ltd., at Southgate, N.11. Among member firms present were representatives from R. & A. Main, Ltd., Radiation (Large Cooking Equipment) Ltd., James Stott & Co. (Engineers), Ltd., and Sumerling & Co., Ltd.

SOUTH EASTERN TARIFFS

FURTHER consideration was given at a meeting of the South Eastern Gas Consultative Council on November 4 to a recommendation from the Kent County District Committee who had supported the recommendation for special consideration in the matter of bread-baking tariff discount on behalf of the Sittingbourne Co-operative Society. The Council rescinded a former resolution and decided that in all the circumstances there was no justification for a direct approach to the South Eastern Gas Board, particularly in view of the fact that the bread-baking tariff schedule had been accepted on behalf of the industry by the Master Bakers' Association. It was decided to refer the matter back to the Kent County District Committee, coupled with reference to the fact that at the time the South Eastern Gas Board's revised tariff rates and discounts were introduced the Council was consulted and had given its general approval to the Board's proposals.

The Council had been approached by a Cheam consumer as to the legality of the Board's charges for installing a separate meter for assessing a consumer's liability under central heating tariff schedules. The Council had previously confirmed its approval of the Board's charges, inasmuch as one of the conditions for obtaining such a discount was that the gas supplied for this purpose must be separately metered, and therefore it was incumbent on an applicant for such a discount to defray the cost of installing the meter. The Council held the view that this was comparable with any other subsidiary meter installed for a consumer's convenience.

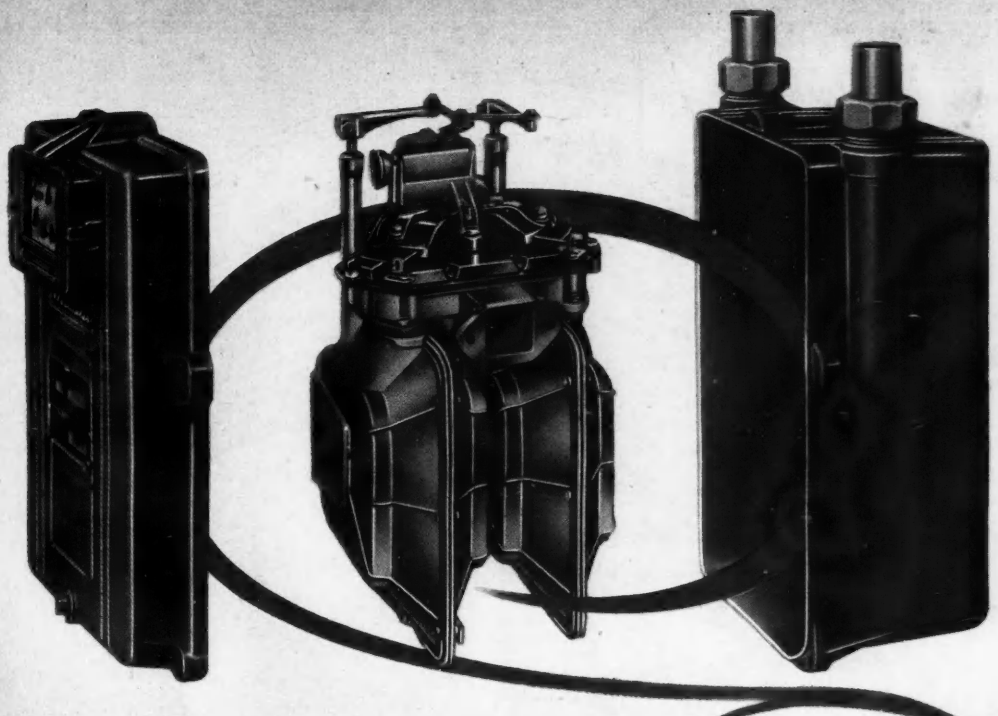
Complaints had been received from consumers relating to the Board's revised charges for maintenance service and maintenance service contracts which had been in operation since June, 1951. The Council recorded the view that, in general, consumers may not appreciate the details and work involved in this service, the charges for which in all the circumstances, and in the light of present day costs, were not unreasonable.

A combined meeting of the Council and its district committees, numbering 80 members, following the publication of the Board's third annual report, will be held at Caxton Hall, Westminster, on December 2, at 2.15 p.m.; public and Press will be admitted.

The South Eastern Gas Board has agreed to co-operate in the matter of publicity by the display of show cards relating to the work of the Consultative Council in each of its showroom windows.

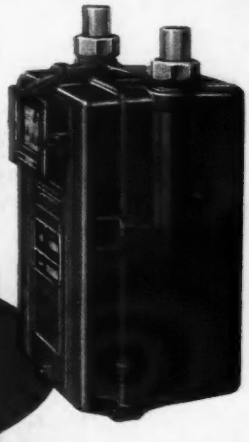
Arrangements are proceeding for additional appointments to be made by the Minister of Fuel and Power, bringing the Council up to its original numerical strength of between 25 and 30 members.

BM22



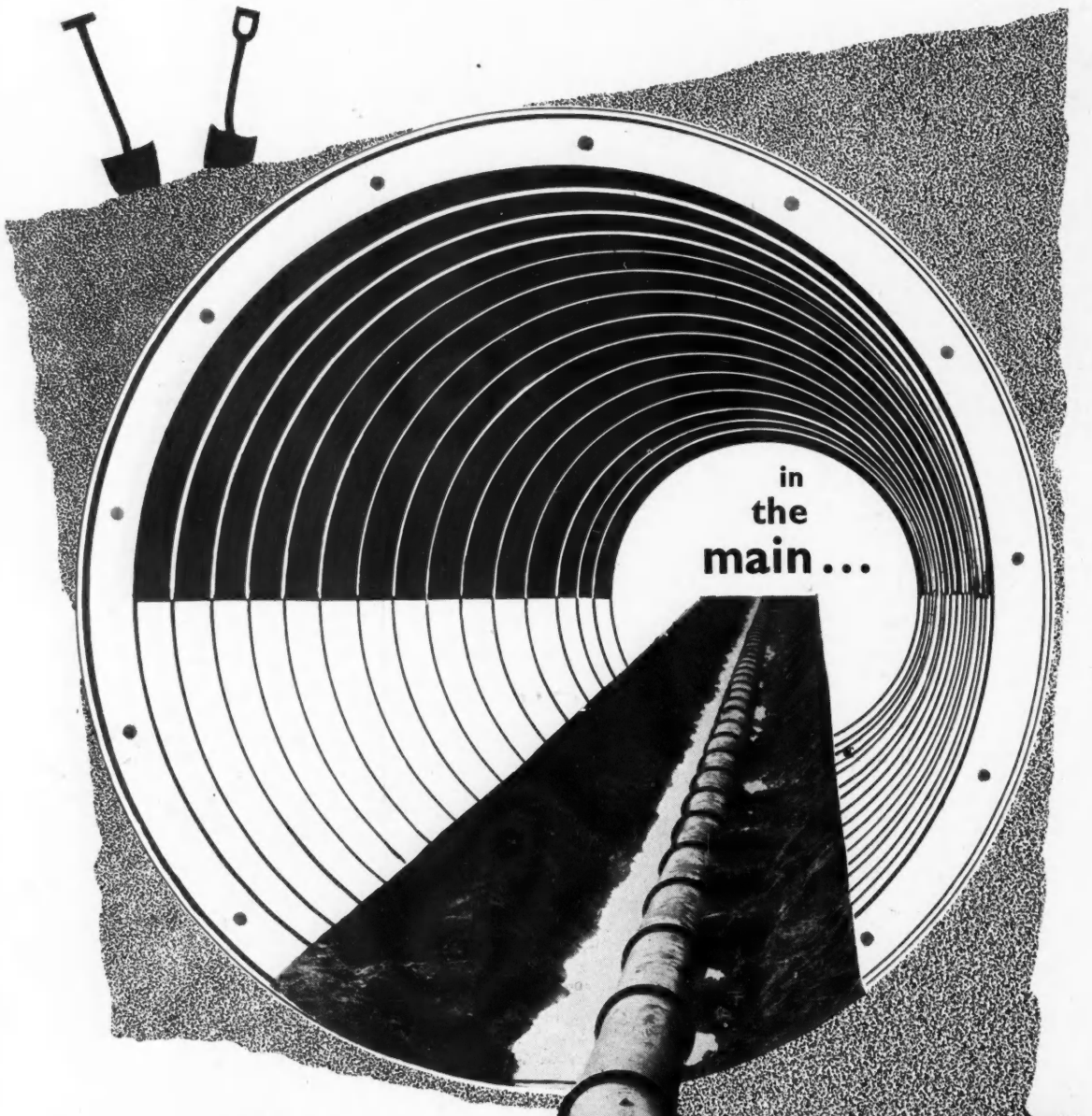
Finer frame for a great-hearted meter

Begwaco have found it possible to make their outstanding meters even better. By housing the measuring unit in a case of only two parts, the meter is made even simpler to service, whilst of course retaining the characteristic Begwaco high accuracy at all rates of flow. This is the result of applying the latest techniques in pressure die-casting. With the new Flomaster, only five screws need be undone to open the case for inspection. And by taking out two more, the entire mechanism can be withdrawn. The Flomaster follows its predecessor in being the meter for everyone's money.



BEGWACO
Flomaster
with new 2-part case

BEGWACO METERS LIMITED · QUEEN STREET · FARNWORTH · LANCS



In the main, a competitive tender coupled with the reputation for work of 100% efficiency in any terrain, are the basic conditions required of contractors. NORWEST can satisfy you completely on these points plus others. Situated plumb in the centre of the British Isles, we are ideally situated to serve all sections of the National Gas Industry with promptness, speed and economy. May we quote you for your next mains laying job ?

THE MAIN LAYING PEOPLE NORWEST

NORWEST CONSTRUCTION CO. LTD., LIVERPOOL 21

CIVIL ENGINEERING CONTRACTORS

CVS-11

IN PARLIAMENT

Gas Industry Health Services

THE subject health services in the gas industry was raised at Question time on November 10 when Mr. S. T. SWINGLER (Newcastle-under-Lyme) asked the Minister of Fuel and Power if he would give a direction under Section 7 of the Gas Act, 1948, to the Gas Council to establish in each area a full-time industrial medical staff as part of a comprehensive health service for the industry.

Mr. GEOFFREY LLOYD replied that as at present advised he did not think this was necessary, whereat Mr. SWINGLER asked if the Minister had enquired of the Gas Council into the situation. Was the Minister aware that only four of the 12 area boards at present had full-time industrial medical staff and that recent first-aid competitions between the boards had revealed the high value of having such a staff under the boards? He suggested that there was a great need for research into industrial disease in the gas industry. Would the right hon. Gentleman not consult the Gas Council again about promoting this aim?

The MINISTER observed that he was in favour of the development of a proper industrial health service, but they ought to bear in mind that for some boards, with small and scattered installations, it would not perhaps be the best plan to have a full-time medical officer; it might be better to rely upon local practitioners. If the hon. Member would like to bring any specific information to his attention, he would be grateful to have it.

First-Aid Equipment

Mr. A. C. MANUEL (Ayr and Bute) reminded the Minister that although there might be small, scattered installations there was always the possibility of gassing accidents among workmen during excavation and other work. Should not the right hon. Gentleman follow out the lines of the previous suggestion by seeing that someone was appointed who would at least set up a good first-aid equipment in each of the smaller works?

First-aid equipment, replied Mr. LLOYD, was quite a separate question. It must be remembered that if they were to rely on a full-time medical officer, there was a danger of too much of his time being spent in travelling to the different installations over the whole area.

The battle for the welfare of the gas worker broke out again at Question Time on the following day, when Mr. SWINGLER returned to the attack by asking the Parliamentary Secretary to the Ministry of Works, as representing the Lord President of the Council, on what lines it was intended to pursue research into the special causes of lung cancer in gas workers through the agency of the Medical Research Council.

Mr. A. H. E. MOLSON replied that the M.R.C. had arranged for one of its expert committees to examine the possibilities. Until this committee had time to consider the problem in detail, he would not be able to indicate which lines of research was likely to be most promising.

Would the hon. Gentleman ask his noble Friend to pursue this matter energetically? Would he consult the Minister of Fuel and Power, because, said Mr. SWINGLER (adroitly manoeuvring his supplementary so as to emphasise the point which had fallen on stony ground in his previous day's question), one of the troubles was that two-thirds of the gas boards did not employ full-time medical staffs? Would this committee therefore enter into consultation with the Minister of Fuel and Power on the aspect and arrange for research?

Mr. MOLSON reiterated that the whole matter was under careful consideration and was still being followed up.

Fuel and Power Charges

Mr. A. W. J. LEWIS (West Ham) on October 29 asked the Minister of Fuel and Power if he would give details of the rise in prices and charges for fuel and power since October 1, 1951, until the latest convenient stated date.

Mr. GEOFFREY LLOYD stated, in a written reply, that it was not practicable to give details of changes in fuel and power prices which varied with the locality and with the nature and quality of the supply; but the data collected by the Ministry of Labour showed average increases in retail prices between September 18, 1951, and September 16, 1952, or 8% for coal, 9% for coke and gas, and 13% for electricity.

Interest on Stock

Mr. EMRYS HUGHES (South Ayrshire) asked the Prime Minister on November 13 if, to relieve the burden on nationalised industries, he would introduce legislation to reduce the rate of interest payable on stock issued by way of compensation to the previous shareholders.

To Mr. CHURCHILL'S unequivocal 'No Sir,' Mr. HUGHES suggested that the Prime Minister's answer would cause extreme disappointment to those who thought that his speech on the nationalisation of the railways and the compensation for shareholders was the best speech he had delivered for 41 years. Mr. CHURCHILL dryly observed that he was not all sure there were not some other speeches he would rather pick.

Select Committee

A Select Committee has been appointed to consider the present methods by which the House is informed of the affairs of the nationalised industries and to report what changes, having regard to the provisions laid down by Parliament in the relevant statutes, may be desirable in these methods.

Members of the committee are: Mr. A. Albu (Lab., Edmonton), Mr. R. Assheton (Con., Blackburn, West), Mr. A. Champion (Lab., Derbyshire, South-East), Mr. Ernest Davies (Lab., Enfield, East), Viscount Hinchingbrooke (Con., Dorset, South), Mr. H. Linstead (Con., Putney), Mr. P. Noel-Baker (Lab., Derby, South), Sir P. Spens (Con., Kensington, North), Mr. C. Thornton-Kemsley (L. and C., Angus and Kincardine), Sir H. Williams (Con., Croydon, East), and Mr. R. Williams (Lab., Wigan).

The minutes of the evidence taken before the Select Committee on Nationalised Industries in the last session of Parliament is to be referred to the Committee, who have the power to send for persons, papers and records and to report from time to time.

Lecture on Heat

THE second Christmas lecture for juveniles to be held under the ægis of the Institution of Gas Engineers, will be given, by permission of the Rector of the Imperial College of Science and Technology, in the main physics lecture theatre of the College, in Imperial Institute Road, S.W.7, on January 9, at 2.30 p.m.

The lecturer will be Dr. R. W. B. Stephens, A.R.C.S., D.I.C., who has chosen as his subject 'Heat,' covering the nature and effects of heat; temperature and its measurement; heat and light; heat and electricity; propagation and motive power of heat; man as a heat machine; everyday applications of heat in the home; industry and agriculture.

Dr. Stephens is Senior Lecturer in Physics at Imperial College and directs research on thermal conductivity of insulators and on ultrasonics. The lecture will be supported with practical demonstrations and experiments.

Admission will be free and tickets may be obtained from the Secretary of the Institution after December 1. Accommodation is limited to approximately 220.

The Nottingham Undertaking of the East Midlands Gas Board has embarked upon its sixth Annual Homecraft Course, arranged in conjunction with the Women's Gas Federation. The course is designed to provide housewives with talks on topics of interest in connection with home-making, and this year's programme of ten evening meetings will cover subjects from 'Nylon and its Uses' to 'Flower Decoration' with several talks dealing with aspects of catering.

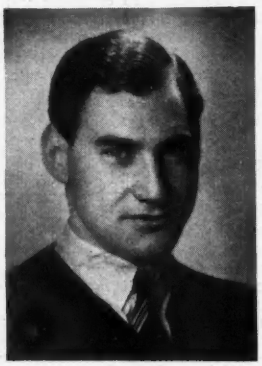
British Electronic Products (1948), Ltd., which became one of the subsidiary companies of the Lancashire Dynamo Group in early 1950 and which has continued to expand its range of industrial electronic equipment since that date, has now changed its name to Lancashire Dynamo Electronic Products, Ltd. Manufacture and development will continue without interruption under the new title, from the same address—B.E.P. Works, Rugeley, Staffordshire.

Gas Supply to New Towns

By C. D. SHANN, M.A., A.M.I.C.E., M.Inst.Gas E.,
North Thames Gas Board

From a Presidential Address to the London and Southern Junior Gas Association, October 10, 1952

IT has been the policy in this area since the war to continue the reduction in the density of population in the County of London, which began before the war and was accelerated by it, and this is being achieved in three ways: First, by the construction of the new (or satellite) towns at distances of from 20 to 30 miles from London to which suitable industries and a balanced cross section of the community are encouraged to move; secondly, by the construction of large housing estates beyond the former built-up fringe to which those on waiting lists for houses are, for want of a better word, directed; and thirdly, by the re-development of housing on slum clearance or war damaged sites in the inner area at a considerably reduced density than previously existed. As regards the repercussions on gas supply of this decentralisation of population, the most important feature within my field of interest has been the necessity to provide local distribution systems in the new towns and in all the metropolitan fringe estates, which in turn have had to be reinforced by extensions of grid feeder main systems and by construction of local storage, in order to supply people who are moving away from the inner area where they were already supplied from an established distribution system.



Mr. C. D. Shann

Unexpected Repercussions

To a lesser extent even re-development within the inner area has had somewhat unexpected repercussions on the distribution system—at least in so far as local mains are concerned. For some reason which I have not yet been able to fathom there are two alternative rules, to one of which those responsible for the laying out of re-development estates must adhere. The first, and most popular, is that if the existing roads run north and south the new buildings must lie, if possible, across them, east and west; this does not apparently relate to a desire to provide the new buildings with a southern aspect because it seems to apply with equal force to existing roads which run east and west, when the buildings have to lie north and south. The alternative rule is that if the new buildings are to lie more or less parallel with the existing roads, they must either be built over them or at such a distance from them that it is no longer an economical proposition to connect the new services to the existing mains.

Off-setting the resultant increase in the cost of supplying consumers, there has fortunately been an increase in the consumption per consumer, and it might be argued that additional mainlaying would in any case have been necessary to maintain satisfactory conditions of supply in the central area even if there had been no movement of population. In general, however, the established mains system in the inner area would have been capable of distributing the increased load because most of the principal mains have a reserve of capacity. The explanation is that these mains are of large diameter because they were laid when capital costs were low, when road surfaces were simple to break-up and reinstate and before there was much congestion of underground plant, and they were designed to operate at initial distribution pressures much lower than those now prevailing.

It might also be suggested that the laying of new mains, either in new outer area estates or in re-development sites, in substitution for existing ones which have to be abandoned, can be regarded as forming part of the normal process of plant replacement. In reply it must be pointed out that in these circumstances the selection of the existing mains to be taken out of commission does not rest with the Gas Board, and while it is true that such mains were usually laid upwards of 40 years ago, the majority are still in a condition to give many more years of useful service. In the case of re-development sites the Gas Board may, subject to conditions in part determined by the particular Act of Parliament selected by the local authority for extinguishment of rights of way, be able to recover some of the costs incurred, but the process is both involved and subject to widely divergent local interpretation.

Supporting Statistics

Even in a particular branch of one industry there are difficulties in producing comparable figures when attempting to cover a period of more than twenty years; in this case, for example, there were amalgamations of four other companies with the Gas Light and Coke Company between 1930 and 1932; in 1937 there was a change in the method of distribution costing; between 1939 and 1945 there was a war; and in 1949 the Gas Light and Coke Company was merged in the North Thames Board. For reasons such as these I have found it necessary, in order to present comparable figures, to quote those which relate to the Gas Light and Coke Company's district only, and have selected for comparison the three seven-year periods 1932/38, 1939/45, and 1946/52.

There are quite a number of interesting deductions to be made from a study of these statistics, but there are a few to which I would draw particular attention. The decrease in the population of the inner area which had started before the war was artificially accelerated by it, and this, I believe, accounts for the slight recovery in the post-war period; it seems probable that the downward trend will be resumed.

In the period 1932/38 there was a general influx of population into the greater London area which more than offset the reduction in the inner area; but although the population in the outer area has consistently increased, the population in the area as a whole is less now than it was in 1938. Incidentally, the policy of decentralisation is bound to reduce the proportion of the population included in the area of the North Thames Board relative to that in the other London Boards due to its 'bow tie' shape. Whereas within five miles radius of Charing Cross the North Thames Board includes an area of 54 square miles, the South Eastern 24 and the Eastern only 0.2, at twenty-five miles radius the South Eastern has 772 square miles, the North Thames 602 and the Eastern 510.

Although there has been an increase in consumers since the war, the total number is still below 1938; fortunately consumption per consumer is higher now than ever before. The number of consumers per mile of main has steadily deteriorated; whereas in 1932 the overall figure was 264 per mile, the corresponding figure is now only 225, and the rate of additional consumers per additional mile has fallen to 170.

(*Continued on page 459*)

Efficiency that you take for granted . . .

Do you ever think of what lies behind the simple operation of lifting your receiver and talking to the person at the other end of the wire? You don't. You take for granted all those miles of wire, hundreds of underground conduits, elaborate and intricate "almost-human" electrical apparatus, and all the research that has gone to bring the telephone system to its present peak of efficiency.

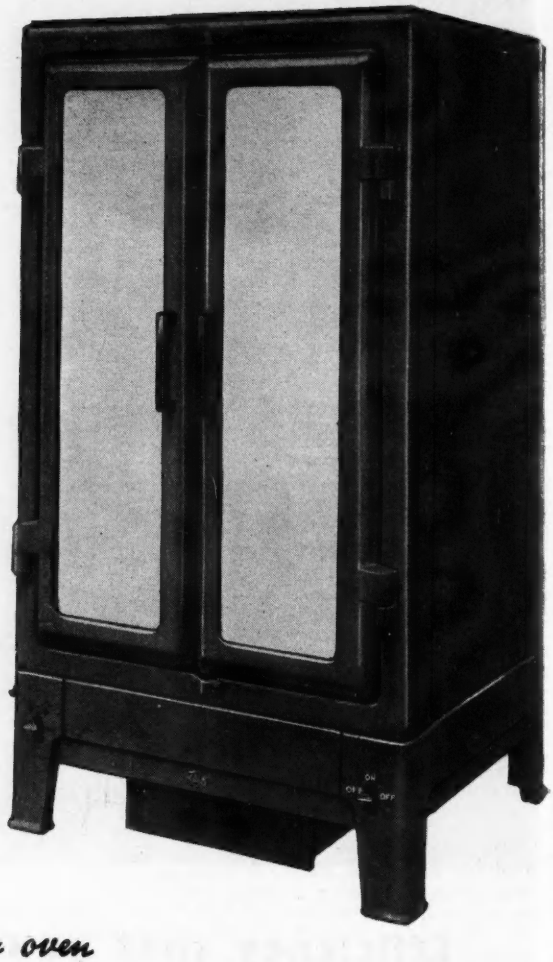
The engineer who uses Wakefield Industrial Lubricants takes their efficiency for granted. The reason is this. He knows that behind every brand of Wakefield Lubricant lies 50 years of specialisation, 50 years of striving always to improve the best, 50 years of supremacy in oil efficiency, oil-progress and oil economy. To use Wakefield Oils, combined with the full use of their Industrial Lubrication Service, is one of the surest ways to greater efficiency and lower operating costs.

C. C. WAKEFIELD & CO. LTD · GROSVENOR STREET · LONDON · W.1

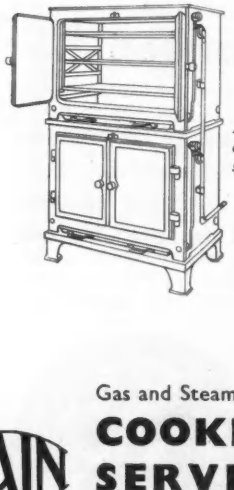
Roasting Oven

that makes the most of every inch of cooking space

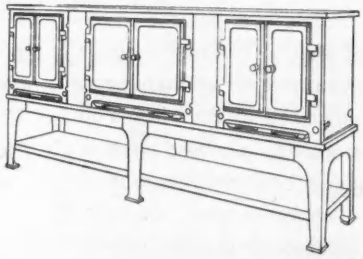
This large Roasting Oven . . . one of an extensive range of Main designs . . . has an interior oven size 30″ wide x 30″ deep x 48″ high. Efficiently heated by two atmospheric burners the oven has enamelled steel linings and is fitted with three grid shelves carried on removable side hangers. The appliance is strongly constructed, mainly of cast iron, and is finished externally in Dapple Grey Vitreous enamel with white enamelled door panels and bakelite door handles. The oven is mounted on enamelled cast-iron feet and the storage pan under the oven is of copper with an enamelled cast-iron front.



other types of roasting oven



A Vertical Battery of two ovens on a short stand.



An Elevated Battery of roasting and general-purpose ovens.

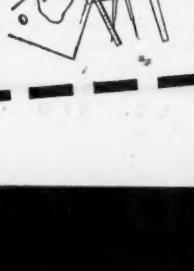
Gas and Steam

MAIN

COOKING and SERVICE EQUIPMENT

STEAMERS HOT CLOSETS BOILING PANS ROASTING OVENS GAS RANGES FISH FRYERS

R. & A. MAIN LTD., LONDON and FALKIRK



our "Planned Kitchencraft" Department is at your service

If you have a catering problem consult R. & A. Main Limited. Our organisation, backed by years of experience in planning and equipping kitchens of all sizes, will gladly work with you in developing your own ideas or submit plans for your kitchen.

TABLE I.

STATISTICS RELATING TO THE GAS LIGHT AND COKE COMPANY'S DISTRICT

Period		1932/38	Inc. or dec.	1939/45 Inc. or dec.	1946/52	Inc. or dec.
Population (millions)	Inner* ..	3.1 to 2.8	−0.3	−0.5	2.3 to 2.4	+0.1
	Outer* ..	1.4 to 1.9	+0.5	+0.1	2.0 to 2.2	+0.2
	Total ..	4.5 to 4.7	+0.2	−0.4	4.3 to 4.6	+0.3
Consumers (Main meters)† (mill.)		1.31 to 1.54	+0.23	−0.11	1.43 to 1.50	+0.07
Gas Sold (Main meters)† (mill. therms)		233 to 240	+7	−21	219 to 317	+98
Consumption per consumer (therms)		178 to 156	−21	−3	153 to 211	+58
Total length of mains (miles)		4,970 to 6,170	+1,200	+80	6,250 to 6,660	+410
Consumers per mile of main		264 to 250	−14	−20	230 to 225	−5
Additional consumers per additional mile ..		191		—	170	
Cost of additional mains .. (million £)		1.6		—	2.6	
Cost of additional mains per mile (£) ..		1,330		—	6,350	
Cost of additional mains per additional consumer (£)		7		—	37‡	

* *Inner.* An area bounded by and including St. Pancras, St. Marylebone, Willesden, Acton, Brentford and Chiswick, and Barnes on the west, and East Ham and Leyton on the east.

Outer. The rest of the Gas Light and Coke Company area, including local authority areas more than half therein.

† Includes all main meters on supplies to domestic and industrial consumers; excludes check meters, bulk supplies, public lamps and used in gasworks processes.

‡ This cost should not be confused with the cost of local supply mains per new dwelling on new housing sites, which for the North Thames Gas Board averages £15 5s. and may be broken down as follows:

Central districts £5 5s.; inner suburban districts £13 5s.; outer suburban and rural £19.

These last three costs are particularly significant when it is remembered that the heaviest trunk main charges are also incurred in supplying the outer development.

Turning now to the comparison between the pre-war and post-war periods it will be seen that the cost per mile of laying the additional mains in the latter period was 4.75 times that in the former. The general rise that has taken place in prices of labour and materials has only had the effect of raising the cost of laying any given size of main by 2 to 2½ times, and the difference is accounted for by the fact that, due to most of the building development having taken place remote from a gasworks, the proportion of the more costly trunk main mileage has increased from under 10 per cent. to over 30 per cent.

It will be noted that the cost of additional mains per additional consumer has increased 5.3 times. But as though a cost of £37 for mains alone (excluding service pipe, meter and installation pipes) for each new consumer were not high enough, let me make one final observation on these statistics. Taking the two periods 1939-45 and 1946-52 together, more than two and a half million pounds have been spent on laying mains principally to supply new building development; but due primarily to the war and partly to the policy of decentralisation, the number of consumers has fallen by 40,000.

Inferences to be Drawn

These figures show that we in the London area, and particularly those in the North Thames Board, have no cause for complacency. Those of us on the distribution side must do all we can to keep down the cost of supplying new development. This may be achieved in part by the introduction of new materials for pipes and joints, and by improved methods of pipe laying. It may have to be achieved in part by adopting practices which, without in any way affecting the safety of the public, fall short of what we have come to regard as ideal, but above all it will have to be achieved by those who are responsible for designing extensions of the system selecting the most economical combination of pumping plant and pipe size for trunk supplies and the most effective lay-out for local mains, and by those responsible for executing the work ensuring that it is carried out by the most efficient method available.

Although already well understood by those actively engaged on the sales side it would be advantageous for us all to appreciate, first, that consumers have to be secured afresh every time they move home; secondly, that because mains have usually to be laid past nearly every house in a new estate whether or not a supply to each is required, it is important to enlist a consumer in each house; and, thirdly, that new loads are required for the established mains system in the inner area to replace those being lost due to movement of population. We should all exert what influence we have with potential consumers to assist our sales staff.

Effects on Other Public Utilities

Consideration of the policy of decentralisation of the population of London and the resultant cost of providing new distribution systems for the areas of new development leads one to contemplate what the effect is on other public utility services.

In the case of the provision of local systems within the areas of new development, it appears to me that each utility service—gas, water, electricity, telecommunications, main drainage and rail (if not road) transport—must as a whole be incurring heavy additional capital cost for very little overall increase in revenue, though, of course, within one service one undertaking may gain at the expense of another.

When considering the provision of trunk supplies to the areas of new development it is certain that extra cost is incurred in the case of gas because the major established production stations are mostly located close to the Thames while development is receding further from them. (So far it has proved more economical to extend the trunk system from the major production stations rather than to construct new works in the areas of development.) The need for an equivalent extension of trunk systems will differ in the case of the other utility services, but it would appear probable that all will to some degree have additional costs to bear on this account.

When one hears that yet another area of open country is being acquired to re-house people to be moved from a built-up district one is inclined to wonder whether not just the general public but perhaps even the 'planners' themselves realise that the cost of the new estate will not be confined simply to the new buildings and roads, which can be seen, but must include also a very considerable outlay on the public utility services which are mostly out of sight.

In the North Thames area, district heating is being installed in one new and four re-development estates. In each estate a complete system of gas mains has also been laid out to provide in all cases for cooking and refrigeration, and in certain cases for other loads such as laundries or topping-up heating. Although it is possible to take into account the limited load for which provision has to be made when determining the sizes of mains required on these estates, there are practical minimum limits in size below which it is not advisable to go. Moreover, reduction in capital cost is not proportional to reduction in nominal size of mains and, of course, still less to capacity.

It is significant that these five estates are all in areas where gas distribution costs are low, which serves to demonstrate a feature of competition from district heating that, in general, the gas or electricity services may lose the base load in areas where it is favourable to all three services but are still expected to take it in those areas where it is unfavourable and, in fact, where district heating just would not be considered.

What has been said emphasises that the economy of district heating is based largely upon the assumption that gas or electricity will be available to provide the topping-up heat without any regard to the cost entailed in works and distribution plant of these two services, and that this factor, in addition to the basic heating and hot water load being taken by district heating, is likely to increase the cost of gas and electricity and should be considered in the total economy.

Distribution System for a New Town

I have recently been engaged on the design of the distribution system for the new town of Basildon in Essex, and it may be of interest to give a short account of it here. This town is planned to cover an area approximately 5½ miles by 2½ miles lying immediately to the south of the Southend arterial road and extending from Laindon in the west to Pitsea in the south-east. A total of about 20,00 houses or flats will be erected and there will be two large industrial estates.

The external source of gas supply to the new town is from an 18-in. medium pressure main recently laid along the arterial road to connect Southend works to the Board's largest works at Beckton, and to feed Brentwood, Basildon and Rayleigh *en route*. A new holder station at the north-east corner of the town is to be connected to this main, and it was decided that the central and eastern part of the town should be supplied from this holder station and that the western part should be supplied through two district governors on another branch from the 18-in. main. Routes for the trunk mains were then selected from these three sources of supply to pass through the areas of building development. The peak demand of each area of domestic building was estimated and provisionally allocated to the most appropriate trunk main route from which it could be supplied.

Three schemes of trunk mains were considered. In scheme (a) the supply from the holder station was entirely at low pressure. In schemes (b)(1) and (b)(2) medium pressure mains were provided from the holder station to feed into the low pressure system through four district governors. Calculations were then made to determine the most suitable size of main to lay in each part of each route, bearing in mind the permissible pressure loss.

Two special provisions had to be taken into account when calculating the size of mains:

(i) that although the mains were in general designed to supply the domestic peak load, certain of them had also to be designed to carry the industrial peak load. (The domestic peak is, of course, at mid-day on Sunday and the industrial peak is likely to be on Monday morning so that, fortunately, they will not coincide);

(ii) that there should be a link between the area normally supplied from the holder station and that normally supplied direct from the 18-in. main of sufficient size that the whole town could be supplied from either source in an emergency.

A summary of the trunk mains required for the supply of the whole town is shown in Table II, the lengths being sub-divided into three periods corresponding to the development of the town and also sub-divided according to the requirements of the three schemes of supply from the holder station.

Both of the medium pressure schemes would require the installation of pumping plant at the holder station, but for scheme (b)(1) this would not have to be installed until about 1957, while for scheme (b)(2) it would be deferred until possibly 1965.

The relative costs were estimated to be:

	Capital	Annual Charges
Scheme (a)	1.06	0.95
Scheme (b)(1)	0.95	0.97
Scheme (b)(2) (adopted)	1	1

TABLE II.

BASILDON NEW TOWN—TRUNK MAINS REQUIRED

Period	Houses to be erected by end of period	Size of Mains in. diam.	Length of Main, yards		
			Scheme (a)	Scheme (b) (1)	Scheme (b) (2)
1951/55	6,000	30	2,500		
		24	5,000	2,500	4,500
		18	6,000	5,000	3,000
		15		4,000	4,000
		12		2,500	2,500
		8		3,500	3,500
		Governors	One 24-in.	Two 18-in.	Two 18-in.
1956/60	10,000	24	1,800		
		18	3,200	3,200	6,100
		15	2,300		
		12	2,200	7,400	4,500
		Governors	One 18-in.	One 18-in.	One 18-in.
				One 12-in.	One 12-in.
1961/75	20,000	18	7,300	4,000	4,000
		15	1,800	3,200	3,200
		12	4,700	6,700	6,700
		8	1,000	1,000	1,000
		Governors	One 12-in.	Two 12-in.	Two 12-in.

Although scheme (a) showed the lowest annual charge for the complete system (because no local pumping was necessary), it involved higher capital outlay, particularly in the early stages. Moreover, both medium pressure schemes provided greater flexibility to meet higher consumptions than had been allowed for in the calculations, and this applied particularly to scheme (b)(2) where the calculated initial pressure was only 15 in. W.G. as compared with 30 in. W.G. for scheme (b)(1). Scheme (b)(2) was therefore adopted.

The majority of the mains for domestic supply will be of 4-in. diameter though there will also be 8-in. and 6-in. mains to distribute the gas to these from the trunk mains. Many of the blocks of houses and flats are being erected without any apparent relation to the roads, and in consequence the lay-out of the local mains does not necessarily coincide with that of the roads.

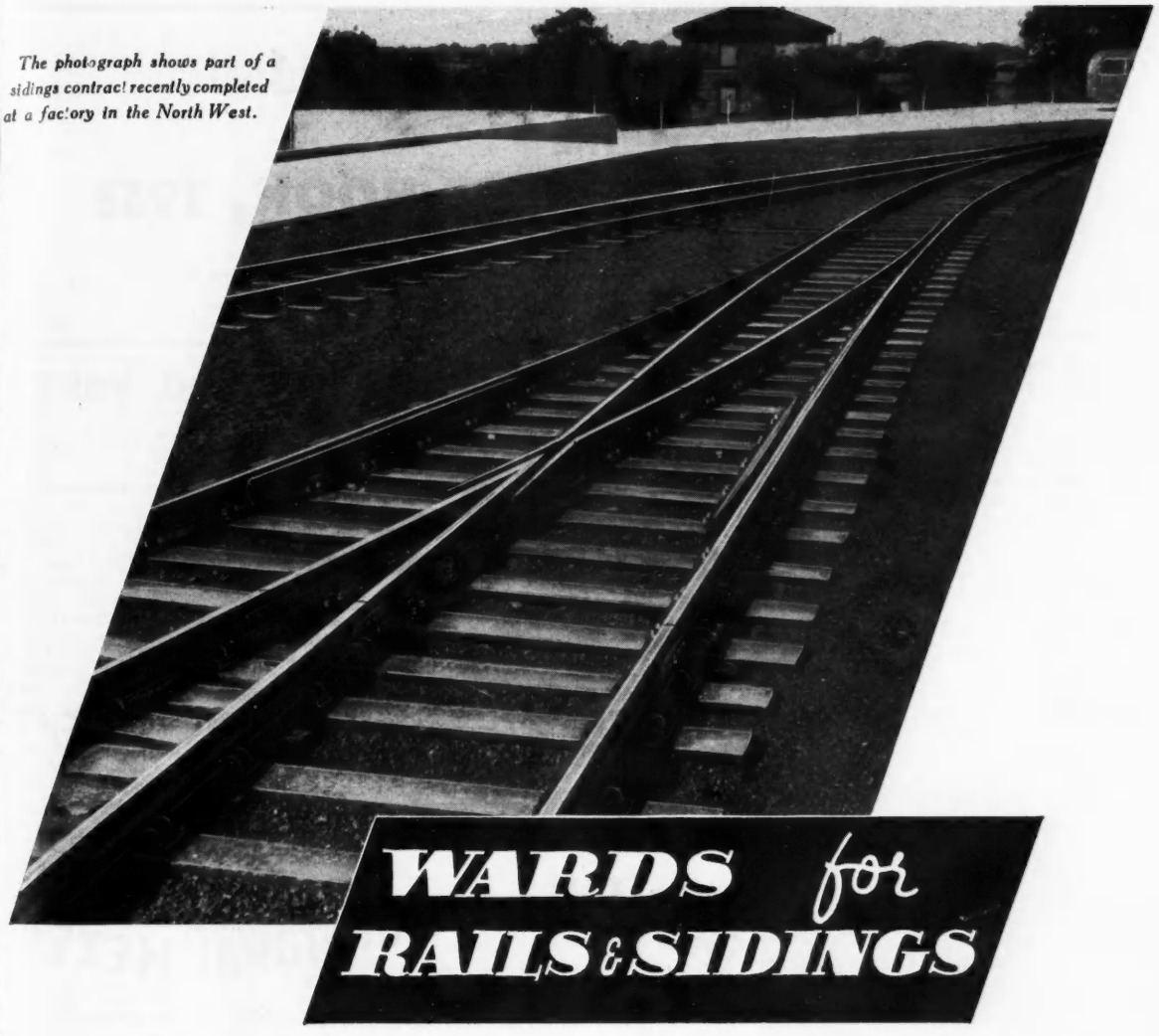
As might be expected, development within the new town is not necessarily beginning at the places where it would be most convenient for the Board to supply it, and it will be several years before the holder station or trunk mains system are available. Meanwhile, it has been possible in most cases to feed into the new local low pressure mains from the existing direct high pressure supply system which fed the scattered houses already in this area; but this system has only a limited capacity and, in order to satisfy a potentially heavy demand in the north east corner of No. 1 industrial estate, it has been necessary to bring in a branch from the 18-in. medium pressure main in the arterial road which unfortunately will have little value in that position in the final scheme. Thus do 'the best laid schemes o' mice an' men gang aft a-gley.'

COAL MINING TECHNOLOGY

SIR HUBERT HOULDSWORTH, Chairman of the National Coal Board, addressing the annual meeting of the Yorkshire branch of the Science Masters' Association, of which he is President, said the financial reward to those who took up the technology of coal mining and went on to the executive side were as high or higher than in any other branch of engineering. There were 50 N.C.B. scholarships a year, but they were not being filled as they ought to be. The N.C.B. was seeking suitable candidates from the schools. While at the university they were given financial assistance and after graduation were taken as directed practical trainees for three years. In the first year they received £450, and in each of the remaining years £550.

Sir Hubert said that there was not, in his view, an adequate recognition by science teachers of the importance to this country, not only of pure scientists, but of those engaged in technological work. There one had an industry such as coal mining, on which the whole economic life of the community depended. it was necessary that teachers should not fail to draw the attention of pupils of suitable outlook and proper temperament to conditions in that industry.

A quick application of research work was wanted, but some fundamental research was also required. The whole of the coalface machinery in the coal mining industry had been built up on empirical methods. The time had come when we must know more about the properties of coal itself. No-one could say how coal broke and how it separated from the coalface, but once we did know we should be able to devise better machinery than could be devised by purely empirical methods.



The photograph shows part of a sidings contract recently completed at a factory in the North West.

WARDS for RAILS & SIDINGS

Industry generally takes much of its static plant and facilities very much for granted. Sidings tend to be put into this category, despite the fact that the word 'static' is the least descriptive of a siding's functions in the general scheme of things.

For this reason Wards continue to build sidings as well as they **can** *be built — firstly because that is the way we always tackle a job and, secondly, because we know this is the only way to ensure maximum efficiency and minimum maintenance — two points of considerable importance to operators of industrial sidings.*

TWW *The Railway Siding Consultants and Contractors*

THOS. W. WARD LTD

ALBION WORKS · SHEFFIELD

TELEPHONE: 26311 (22 Lines) • TELEGRAMS: "FORWARD, SHEFFIELD"

LONDON OFFICE: BRETTENHAM HOUSE · LANCASTER PLACE · STRAND · W.C.2

SC24

To be published week commencing December 1

THE

GAS SERVICE POCKET BOOK, 1953

COMPLETELY REWRITTEN AND REMODELLED IN RESPONSE TO MANY SUGGESTIONS FROM ACTUAL USERS. A FIRST-CLASS POCKET BOOK AND DIARY IN EVERY WAY. OVERALL SIZE 5 ins. × 3 ins.

The Edition is limited. Have you ordered yet?

Please let us know your requirements without delay. Orders already to hand show promise of a record breaking edition.

PRICE 5/- each, inc. postage

FOR SINGLE COPIES

Attractive rates for bulk-purchase of over 250 copies.

WALTER KING, LTD., 11, BOLT COURT, FLEET STREET, LONDON, E.C.4

Telephone : CENTRAL 2236-7

THE NEW A&M OPTIONAL METER

We confidently present our latest coin meter available for pennies and shillings, sixpences and shillings, or half-crowns and shillings and readily adjustable for single coin operation at the gas engineer's option.

The mechanism embodies the fruits of many years' research, every part is precision made to close limits, range-plates are interchangeable - absolutely - one meter with another.

ALDER & MACKAY LTD

NEW GRANGE WORKS, EDINBURGH

Also at

BRADFORD · MANCHESTER · LONDON · BELFAST · NEWCASTLE-ON-TYNE · CORK

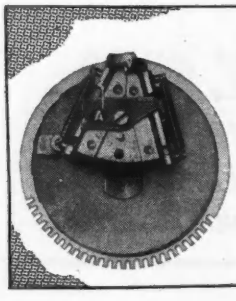


Fig. 1, on left, shows the back of the range-plate adjusted for optional coin. The swinging plate 'A' defies any attempt to insert a coin when one is already in the other slot.

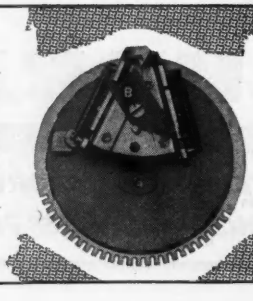


Fig. 2, on left, shows the plate positioned to admit sixpences only. To make this adjustment, loosen screw 'B' and tighten it again with the plate in the new position.

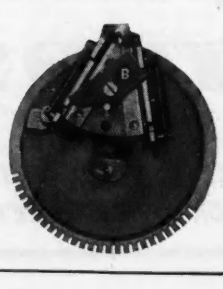


Fig. 3, on left, shows the plate positioned for shillings only. To make this adjustment, remove screw 'B', reverse the plate as shown and replace the screw.

Labour in the Post-War Years

By D. J. WARD, M.Inst.Gas E.,

Deputy Engineer, Windsor Street Works, West Midlands Gas Board.

From a Presidential Address to the Midland Junior Gas Association

AFTER the cessation of hostilities in 1945, as was natural, there was a general feeling of great relief from the strain under which all had been living, the necessity of producing vast quantities of war material eased, and factories turned their attention to the question of reverting to their normal peace-time production with a consequent reduction, in most cases, of the very high war-time wages. As men were released from the Forces, they returned to us, and immediately a problem presented itself. Many had been called up as youths or young men five or six years before, when they were doing junior jobs suitable to their age, but in their years of national service had been promoted to positions of authority, and many were discharged as N.C.O.'s or officers, some of high rank. This applied to both staff and workmen, and it was at once realised that it would be hard to expect these men to return to the same jobs they had left. A panel was instituted, with a high official as chairman, to interview each returning employee, first to welcome him back, secondly to enquire how he had fared in the Forces, and lastly to suggest to what job he might return. To facilitate this, the war service was added to the existing seniority, so that each man was offered the job he might reasonably be expected to have had, had he not been away. This attitude was much appreciated by the ex-Service men, and the majority of those employees who were displaced as a result of the scheme showed no grievance at being demoted.

Freedom of Choice

The expected reduction in outputs did not materialise, so that all available plant was kept at work, and renewals and replacements were proceeded with. The Essential Work Order was rescinded in 1946, which meant that men could now choose where they worked. By this time most of the war-time workers from other parts of the country had gone home, and varied were the types of labour of many nationalities which presented themselves for employment. Though generally good workers, at times the foreigners were a little difficult to fit in. They caused a certain amount of trouble, but usually they did not remain with us very long, and by now have practically all left. This freedom of choice for the worker has caused a definite increase in the amount of work for the office staff and foremen, because so many men stay only a few weeks, although every effort is made to put them at their ease and to explain the kind of work they will be given. Every new entrant is interviewed, and the rates of pay, hours of work, and conditions of employment are explained to him. There is a certain restlessness afoot and, because there is no shortage of work, men tend to drift from one job to another, to find out which they prefer and where they can get the highest wages. This is only natural, but it makes it very difficult to man the varied jobs on a gasworks with the people most suited, and also to teach newcomers quickly enough to maintain the full personnel.

This question of teaching has been helped considerably by the introduction of Training Within Industry. This was instituted in America during the war, to enable intricate and skilled jobs, initially those of assembly, to be performed by unskilled or semi-skilled labour. Each job was broken down into its component parts in the simplest way possible, and a break-down sheet prepared by the instructor for his own use, emphasising key points to be watched and safety precautions to be taken. An appreciation of the first part of T.W.I. called 'Job Instruction' was given to a selected number of the staff in 1948 by an official of the Labour Exchange, and as a result it was decided to institute it on trial in the Birmingham Gas Department. A course of 10 hours in J.I. was given to selected members of the staff, foremen, and workmen, and the deputy engineers were made responsible for promoting interest in T.W.I. at their particular works, for training, and making the returns of work done. A small payment per shift to each non-staff trainer was given, and after a few months T.W.I. was generally accepted and made headway. A T.W.I. officer was appointed with an assistant, and in 1949 a T.W.I. committee, later called the training committee, was formed of this officer and the deputy engineers. The second and third parts of T.W.I. were now introduced—namely, job relations and job methods, the former showing how best to deal with difficult or awkward men and their grievances, and the every-day labour problems which presented themselves. The latter, J.M., showed how it was possible to improve the method of performing any particular job, but after a reasonable trial J.M. has been found not so easy to apply on the works as J.I. and J.R.

In 1948 the 1937 Factory Act was revised and additions were made so that the new publication was comprehensive and covered every section of industry. At the works, safety regulations were tightened up and all personnel were urged to exercise great care in the performance of their work and to make any suggestions which would add to the general safety on the works so that accidents could be cut down to the minimum.

Holidays

Previous to January, 1947, the holidays for manual workers under the City of Birmingham Corporation Holiday Scheme were six working days plus six statutory holidays for both day men and shift men, the shift workers getting the advantage of seven shifts pay for each six days holiday. Their fortnight's holiday was taken each year on dates decided by a rota scheme devised to give each group in turn the benefit of the best periods of the summer. In January, 1947, a scheme inaugurated by the Federation of Gas Employers increased the holiday period to 12 working days plus six statutory holidays, thus giving an extra week to all men. One day per month was allotted in the first year of service, after which shift men received seven shifts pay for each of the first two weeks holiday—*i.e.*, for 12 working days. This holiday was taken during the period from the end of May to the end of August, as before, according to the pre-arranged rota, the extra six days being taken at a convenient time outside this period.

The extra holiday was a great improvement in the conditions of employment, but, of course, necessitated shift relief men being used for longer periods, with a consequent increase in the total cost of holidays to the undertaking.

In July, 1948, when everyone had to be insured under the provisions of the National Insurance Act of 1946, the payment during absence due to sickness or accident was as follows:—

Two-thirds pay less half that received from the State—for seven weeks.

Half pay less half that received from the State—for further six weeks.

After this there was no further payment from the Department. In April, 1951, an improvement in the conditions of employment came into force as follows:—

Full pay less that received from the State for 13 weeks, both for sickness and accident, after which there is no further payment from the Gas Board.

During the last few years much thought has been given to improving the conditions of work for gasworks employees

and much has been accomplished towards this end. Efficient dust extraction plants are installed in the retort houses, at the water gas plants, coke screening plants, and sometimes at boiler plants to reduce dust emission from the stack to a minimum. As a result, the atmosphere in the parts of the works mentioned has become considerably cleaner, to the great benefit of the men employed there. Messrooms, bathrooms, and lavatories have been improved and extended so that there is ample accommodation for the personnel employed, while modern canteens supply abundant cheap meals and are run by a committee composed of the men themselves. Great thought is given to the layout of plant, the tendency being to simplify it and keep it as open as possible. This means that, generally speaking, the work is made easier for the men, and the conditions, particularly in the retort house, are very much better than years ago with the older type of plant.

Again, the gas for heating some ranges of retorts is now provided by external producers with self-clinkering grates, and thus a steady supply of clean producer gas of constant calorific value is fed to the retorts. This tends to improve carbonising conditions generally and eliminates the jobs of fire-minding, and to a certain extent of flue cleaning in the retort house, these being admittedly the two most arduous and unpleasant operations on a gasworks.

The external automatic producer has definitely come to stay, and will undoubtedly be included in all reconstructions and new plant which are scheduled for installation in the future.

For the last four or five years there has been in existence a comprehensive and efficient medical service with full-time doctors and nurses and there are fully equipped ambulance rooms manned day and night at all works.

Safety measures and codes of safe practice have been drawn up referring to all gasworks plant to increase the safety of men working in purifying sheds and in other places where particular care has to be taken. Extensive use is made of purging with inert gas to render the atmosphere of enclosed vessels safe for men to enter—*e.g.*, electro-static detarrers, condensers, stills, etc. A periodical called *Safety News*, a journal of the Royal Society for the Prevention of Accidents, is published monthly at a cost of 5s. per annum, post free. This extremely interesting pamphlet is well worth support. Another similar publication is the *Industrial Accident Prevention Bulletin* printed by the same Society, but free to its members. This deals with the employers' liability under the Factory Act in cases of accidents and gives details of recent accidents and legal decisions, mentioning those of an unusual nature. It is very interesting and many safety hints are given, so this also is worth careful reading.

Technical Education

In regard to education, men are encouraged to take classes at the technical schools to become qualified in their particular branch of work, and also in gas technology. If under the age of 21, they are allowed one day off per week (for which they are paid) so that they may attend the classes, and class fees are refunded if at least 80% possible attendances are made. There is a full-time education officer employed by the West Midlands Gas Board, who looks after their needs and gives them help and advice. Recently there has been distributed a pamphlet from the Gas Council explaining apprenticeship schemes in the gas industry. This is called *Pathways to Opportunity* and explains how boys, after leaving school, can avail themselves of the facilities provided to become qualified to hold positions in skilled trades in the gas industry. It is of interest to note that the headmasters of all Birmingham schools have received a copy of this publication.

It must always be remembered that it is extremely difficult and costly to keep a large gasworks clean and tidy, but it is essential to do so. Most jobs are of a dirty and/or hot nature and not particularly attractive to newcomers. Generally speaking, the conditions of work on a gasworks do not compare favourably with those in a modern factory, where all the personnel are in large workshops which are usually clean and orderly, comfortably heated and often air conditioned, with no dust or fumes, though the work is often monotonous and not varied and interesting as in our industry.

The 'skilled labourer' of 20 years ago has practically disappeared, mainly due to this age of mechanisation. Thus, men have to be encouraged to enter our employment, so it behoves us to provide everything possible to attract the right type of man. Suggestions for this are as follows:—

(1) General cleanliness, including improvements in working conditions—*e.g.*, dust extraction plants, air conditioning plants, etc.
(2) New plant to be of open layout, with good access avoiding crowding and cramping.
(3) Complete mechanisation as far as possible, particularly in regard to handling of coal and coke.
(4) Adequate messrooms, locker rooms, canteens, bathrooms, and lavatories.
(5) Instrumentation of all plant, and adequate technical control.
(6) Existence of a rescue, fire, and ambulance brigade.
(7) Suitable medical service.
(8) Educational facilities and encouragement.
(9) Organised system of training—*e.g.*, T.W.I.
(10) Safety in all operations. These should be performed in accordance with the Codes of Safety Practice issued by the Institution of Gas Engineers.
(11) Social and recreation society, with suitable sports ground.

Perhaps all this may be regarded as too much to be expected in all cases, but the tendency in all branches of industry is for better conditions of employment and greater production per man. This is being done to a great extent in our vast industry, and particularly during the last 3½ years of nationalisation great progress has been made; but to maintain present improvements and to continue progression requires much thought and effort on the part of the administrative staffs.

BOOK REVIEW

SCIENCE IN A COALFIELD

THIS is the title of a practical little book by R. E. Machin. M.SC. (2nd Edition; Pitman, price 8s. 6d. net), which sets out in straightforward language the story of coal from the single-handed effort of a man to provide fuel for his family to the highly organised system of modern mining and subsequent treatment.

It is essentially a textbook for the beginner and as such provides an excellent groundwork for the student intending to enter either the coal or gas industry. In order to make the subject intelligible to those who have had little scientific training, some attention is given in the opening chapter to the elements of chemistry and physics, followed by a section on the latent power in coal and the means of releasing it. The reader is then taken down the mine and introduced to all the latest methods of planning the workings, winning the coal, and bringing it to the surface. The second half of the book is devoted almost exclusively to the production of gas and by-products, with a useful section on the characteristics of flame and another on coal tar and its many derivatives. Indeed, the gas industry figures very largely throughout the latter part, with the latest methods of carbonisation comprehensively covered. (We note in passing that the author ingenuously ignores nationalisation in his references to gas *companies*.)

As a first textbook for the student, 'Science in a Coalfield' offers a complete, yet basically simple, insight to the two major industries concerned. As a schoolbook—and it is equally suitable for such—it provides a scientific background to the visits to coal mines and gasworks which many schools include in their curriculum. It has the additional value, perhaps, of directing attention towards a possible future career. It is well illustrated by photographs and diagrammatic sketches of up-to-date plant and processes—and even of Mr. Therm himself in various character parts—and after a final chapter on the important subjects of safety and welfare concludes with a number of practical laboratory experiments based on the subjects discussed in the text.

We read this book with a great deal of pleasure and interest. There is charm as well as conviction in its simplicity of treatment which at the same time avoids any suggestion of puerility. The author has the facility—all too rare in scientific men today—of presenting a technical subject in such a way as to hold the interest of the non-technical reader to the end.

HYLO-VEYOR

PROBLEMS OF STOCKPILING AND RE-CLAIMING . . .

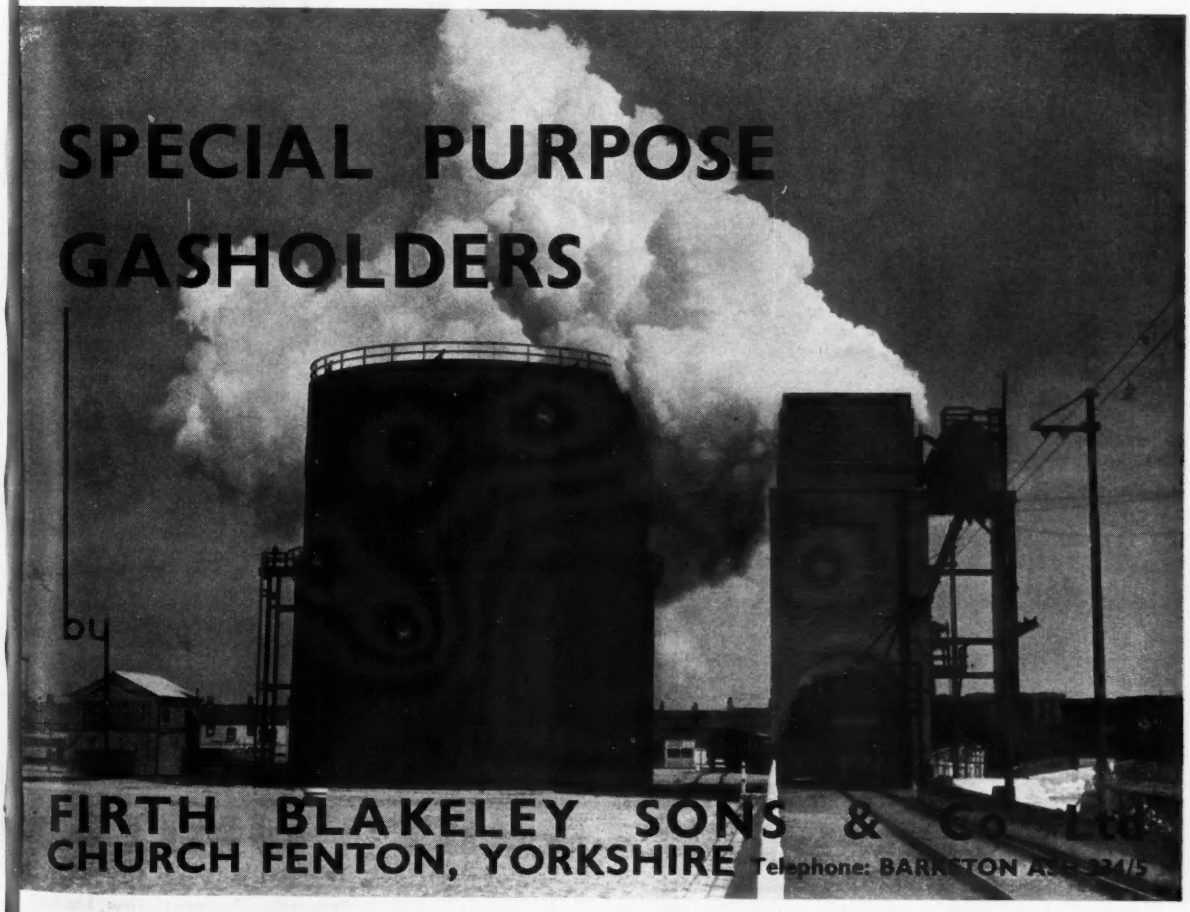
. . are ones to which we have given plenty of thought . . and of which we have had a good deal of experience.

IF YOU HAVE SUCH A PROBLEM may we arrange for our Mechanical Handling Consultant to visit you? Above picture illustrates HYLO-VEYOR WITH RAMP LOADER taking feed direct from lorry to stockpile. Coke or Coal can be handled in this way at **60/80 tons** per hour, and stockpiled to **22 ft.** Also being supplied to the National Coal Board; our **70 ft.** transportable Horizontal Conveyors to take discharge from three railway trucks simultaneously, then by HYLO-VEYOR to stockpile. Power:- electric, diesel or petrol.

Write for Folder H/43

C. H. JOHNSON (Machinery) LTD. Adswood Road (*Grams: "Machinery" TEL.: STO 2642/5*) **STOCKPORT**

670



Specialists in the repair of defective Reinforced Concrete Structures, etc:

LININGS TO STEEL BUNKERS RESERVOIRS, TUNNELS, ETC.

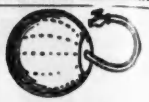
GUNITE
CONSTRUCTION CO. LTD
WESTERN HOUSE, HITCHIN, HERTS.

THOMAS BUGDEN & CO.
India-Rubber and Airproof Manufacturers and General Contractors.
LARGEST MANUFACTURERS OF GAS MAIN BAGS.
Telegrams—"Airproof, Barb, London." Telephone—6147 Clerkenwell

Gas Bags for Repairing Mains

Contractors to H.M. Government

PATENTEES OF THE
DENMAR BAG
Impervious to Main Liquor and Climatic Influences.


Round or Cylinder Shape.

Pull-through and Expanding MAIN STOPPERS.

All types of INDIA-RUBBER BOOTS.

DRAIN RODS AND WHALE-BONE BRUSHES.

HOSE AND TUBING FOR ALL PURPOSES.

Stokers' Mitts and Gloves of every description.

Contractors' & Miners' Woollen Jackets, Trousers, Hats, &c.

244, Coswell Road, LONDON, E.C.1.

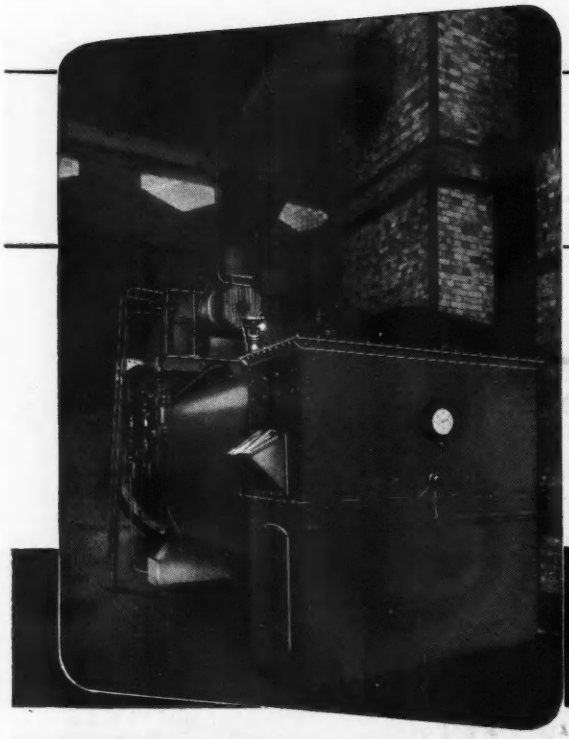
SCRAP GAS METERS WANTED

Top prices paid—Collection arranged from anywhere in U.K.

Sell to those best suited to deal with them.

Sell to — MITCHAM SMELTERS LIMITED
Rometal Works, Red House Road,
Mitcham Road . . . CROYDON . . . Surrey.
Tel: THOrnton Heath 6101. (Private Branch Exchange).

Truck Loads to our own private siding, Beddington Lane, Southern Region.



fuel saving . . .

We are at your service for the preparation of schemes for waste heat recovery, a direct way of reducing Fuel Consumption. Already over 3,000,000 tons of fuel are saved annually by the use of our Waste Heat Recovery Plant. May we investigate the potentialities for fuel-saving in your Works?

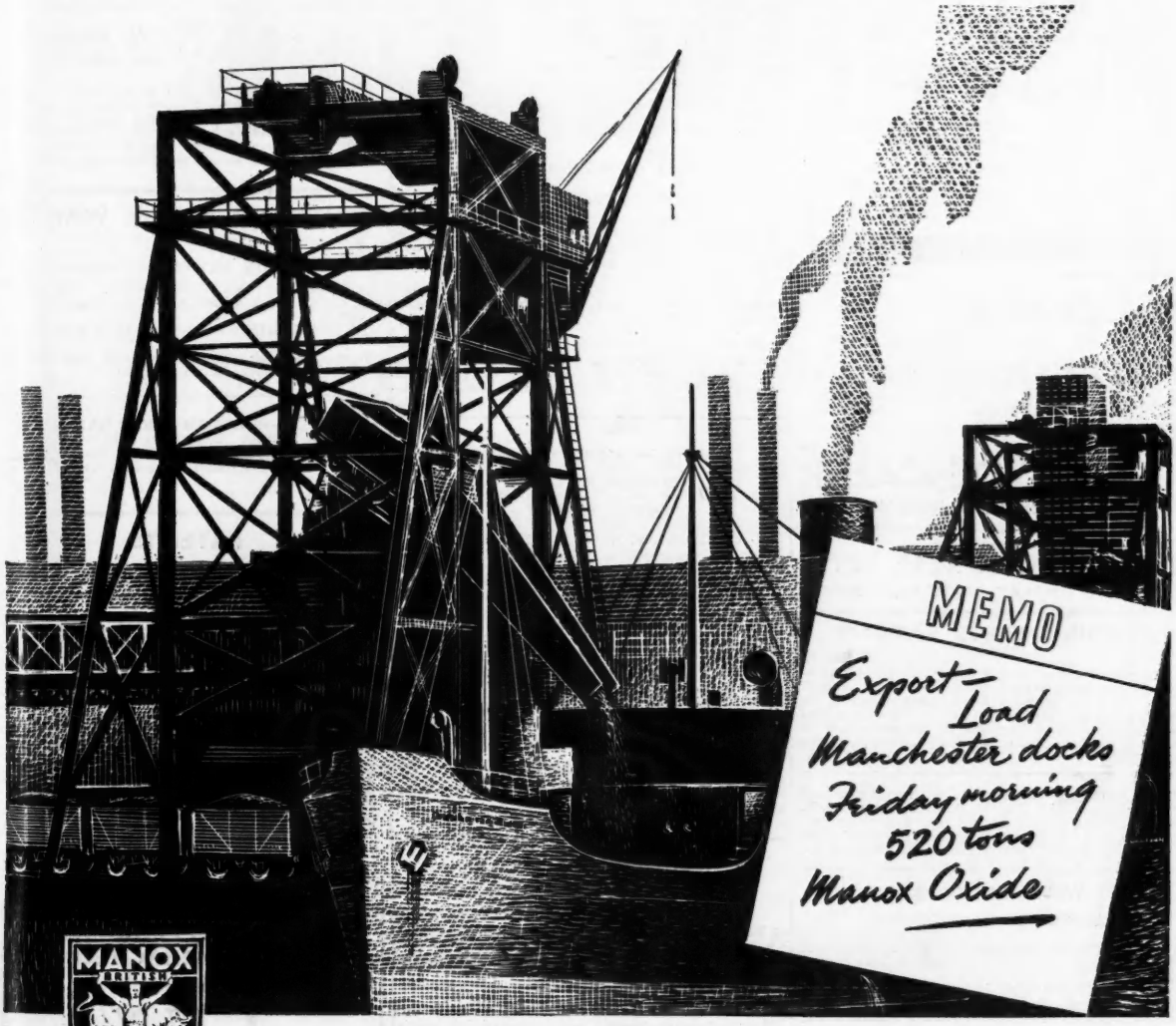
The illustration shows a Spencer-Bonecourt Waste Heat Boiler operating on a horizontal retort installation.

with a **SPENCER-BONECOURT**
waste heat boiler

SPENCER-BONECOURT LIMITED
14, FETTER LANE, LONDON, E.C.4
Telephone: CENtral 0481/2 Telegrams: "Bonecourt, Fleet, London"

SERVICE

FOR THE GAS INDUSTRY



HARDMAN & HOLDEN LIMITED

INCORPORATING MANCHESTER OXIDE CO LTD

MANOX HOUSE · MILES PLATTING · MANCHESTER · 10

TELEPHONES: COLLYHURST 1551 (11 LINES) • TELEGRAMS: OXIDE MANCHESTER

Φ12

OXIDE

DUTCH AND DANISH BOG ORE
SPECIALLY ACTIVATED OXIDE OF IRON

Oxide supplied on loan or sale outright.
Highest prices paid for Spent Oxide.

Send your enquiries to

GAS PURIFICATION & CHEMICAL COMPANY LIMITED
ESTABLISHED 1873
PALMERSTON HOUSE, OLD BROAD STREET, LONDON, E.C.2.

Telegrams: "Purification, Stock, London." Telephone London Wall 5077

FIRE!
WHERE'S YOUR
NU-SWIFT?
The World's Fastest Fire Extinguishers —for every Fire Risk
Pressure-operated by sealed CO_2 Charges
NU-SWIFT LTD · ELLAND · YORKS
In Every Ship of the Royal Navy

"KLEENOFF" *
THE COOKER CLEANER
"KLEENOFF"
FIBRE BRUSHES
RUBBER MOPS
KETTLE DESCALER*
(NEW "KLEENOFF" PRODUCT)
* For resale to the public, and in bulk for Works use
BALE & CHURCH, LTD.
7, CROMPTON WAY, CRAWLEY, SUSSEX.

APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

SHIFT CHEMISTS required with experience of Coke Ovens and Tar Distillation. Please apply, giving details of experience, age, and salary required, to United Coke & Chemicals Co. Ltd., Orgreave Coke Ovens & Chemicals Plant, Handsworth, Sheffield, 13.

WALES GAS BOARD

WORKS' CHEMIST—WREXHAM

APPLICATIONS are invited for the appointment of WORKS' CHEMIST to the Wrexham Undertaking.

A completely new works is in course of completion at Wrexham, and it is necessary that applicants should have had practical experience of modern manufacturing and laboratory practice on a fully equipped works.

The Higher Grade Certificate (Manufacture) of the Institution of Gas Engineers, or equivalent chemical qualifications, is essential.

The salary offered will be within Grade A.P.T. IXA (£595-£695 per annum).

The successful candidate will be required to undergo a medical examination and will be subject to the provisions of any Superannuation Scheme which the Board may introduce.

Applications, stating age, training, qualifications and experience, should reach the Engineer & Manager, Wrexham Gas Undertaking, Rivulet Road, Wrexham, not later than November 24, 1952.

R. & A. MAIN, LTD., require a FIRST-CLASS REPRESENTATIVE for the Provinces, initial training in London. Age between 30 and 40. Excellent opening with good future prospects for the right individual who must be well educated, have personality and selling experience.

Apply in own handwriting to:—Head Office, 48, Grosvenor Gardens, London, S.W.1.

NORTH WESTERN GAS BOARD

MANCHESTER GROUP

CHEMIST—SALFORD WORKS

CHEMIST—STRETFORD WORKS

APPLICATIONS are invited for the above pensionable appointments at salaries within Grade A.P.T. VII (£525-£605 per annum).

Applicants must possess suitable technical qualifications, and have had sound experience and training in the chemical control of a Gas Works.

Detailed applications, giving the names of two referees, should reach the General Manager, North Western Gas Board (Manchester Group), Town Hall, Manchester, 2 within twelve days.

NORTH WESTERN GAS BOARD

LIVERPOOL GROUP

ASSISTANT ENGINEER—

PRODUCTION DEPARTMENT

APPLICATIONS are invited for the above pensionable appointment at a salary within Grade A.P.T. X (£645-£745 per annum).

Applicants should be fully qualified by training and experience in modern Gas Works Practice and Engineering Construction.

Detailed applications, giving the names of two referees, should reach the Chief Personnel Officer, North Western Gas Board (Liverpool Group), Radiant House, Bold Street, Liverpool, 1, within fourteen days.

NORTH WESTERN GAS BOARD

BLACKBURN GROUP

CHIEF CHEMIST—

GREENBANK WORKS, BLACKBURN

APPLICATIONS are invited from suitably qualified persons for the above pensionable appointment at a salary within Grade A.P.T. XI (£670-£795 per annum).

Applicants should preferably be gasworks trained, and fully conversant with the chemical control of all gasworks plant.

The successful applicant will be required to supervise the analytical work at each of the five works in the Group, and to investigate and advise on chemical and chemical engineering problems.

Detailed applications, giving the names of two referees, should reach the General Manager, North Western Gas Board (Blackburn Group), Cardwell Place, Blackburn, within fourteen days.

SOUTHERN GAS BOARD

DIVISIONAL ACCOUNTANT

APPLICATIONS are invited from qualified accountants for the position of Divisional Accountant of the Board's Northern Division at a salary of not less than £1,750. The position is pensionable and the successful applicant will be required to pass a medical examination.

Applications, stating age, education, training, qualifications, and full particulars of previous experience (including positions held and salaries earned), together with a one-page summary covering these five headings, should be sent in an envelope marked 'Divisional Accountant' to the General Manager, Northern Division, Southern Gas Board, Therm House, St. Aldate's, Oxford, to reach him not later than Friday, December 5, 1952.

T. E. D. MASON,
Secretary.

164, Above Bar,
Southampton.
November 11, 1952.

SCOTTISH GAS BOARD

STIRLING DISTRICT

APPLICATIONS are invited for the position of TECHNICAL ASSISTANT (DISTRIBUTION) at Stirling, at a salary within A.P.T. Grade V, *i.e.* £445-£525 per annum. Applicants should have experience in high and low pressure distribution systems design, planning and general gas distribution practice.

The post is superannuable and the successful candidate may be required to pass a medical examination.

Applications, stating age, qualifications and experience should reach the undersigned not later than December 1, 1952.

W. M. GLEDHILL,
Sub-Group Manager.

Gas Offices,
Thistle Street,
Stirling.

THE Clarence By-Product & Distillation Plant of Dorman Long & Co. Ltd., require the following drawing office personnel:

1—LEADING DRAUGHTSMAN fully experienced in the design and layout of coal products distillation plant and capable of taking charge of a small drawing office in the absence of the Chief Draughtsman.

1—SENIOR DRAUGHTSMAN with experience of the above type of plant.

1—JUNIOR DRAUGHTSMAN preferably with experience of similar work, not less than 23 years of age and with, in any case, sound engineering drawing office training.

Permanent employment with good prospects to men with skill and initiative. Pension scheme in operation. Apply stating age, experience, wage required and when at liberty to Chief Technical Engineer, Central Engineering Department, Dorman Long & Co., Ltd., G.P.O. Box 11, Royal Exchange, Middlesbrough, Yorks.

PLANT FOR SALE & WANTED

READY FOR IMMEDIATE DELIVERY

New CORNISH BOILER 20 ft. × 6 ft. × 150 lbs. w.p.
New CORNISH BOILER 24 ft. × 6 ft. 6 in. × 150 lbs. w.p.
New LANCASHIRE BOILER 24 ft. × 6 ft. 6 in. × 160 lbs. w.p.
Clayton, Son & Co., Ltd., Moor End Works, Hunslet, Leeds, 10.

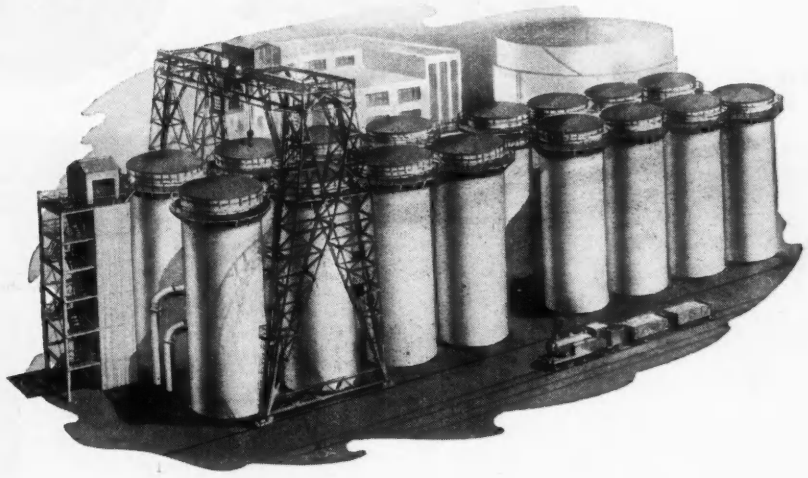
WANTED:—REGULAR SCRAP GAS METERS AND PARTS. Best prices paid. Offers to:—Mitcham Smelters Ltd., Red House Road, Croydon, Surrey. *Tel.*: THOrnton Heath 6101 (Private Branch Exchange).

PATENTS

KINGS PATENT AGENCY, LTD.
(Director, B. T. King, A.I.M.E., Patent Agent). Advice, Handbook, and Consultations free. 146a, Queen Victoria Street, London, E.C.4. 'Phone: City 6161.

LEEDS X L PLASTIC FIRE CEMENT
FOR BUILDING & REPAIRING FIREBRICK WORK ETC
LEEDS X L FIRE CEMENT CO., HYDE PARK, LEEDS.

The
LIMIT OF EFFICIENCY CAN BE REACHED
by the use of
LUX
GAS PURIFYING MATERIAL
Sole Importers:
HARRISONS (London) LIMITED
66, Mark Lane, LONDON, E.C.3
Telegrams: Birchrock, London Telephone: ROYal 3120



Modern

DRY PURIFICATION PLANT

TOWER PURIFIERS were first introduced into this country by W. C. Holmes & Co. in 1937. With this method of dry purification, the chief advantages over other types of purifying boxes are ease of oxide handling and economy in ground space. The oxide is not in contact with the tower surfaces.

A total of fifteen sets have either been installed or are on order, including four double sets as illustrated above, for Wandsworth, Birmingham (Nechells), East Greenwich and for the Stanton Ironworks Company Limited.

W. C. HOLMES & CO. LTD.

HUDDERSFIELD • LONDON • BIRMINGHAM

Tel: Huddersfield 5280 London: Victoria 9971 Birmingham: Midland 6830

HOLMES HUDDERSFIELD

C422

we serve to burn

"Fishtail" type burner *with two-armed stamped pattern injector for heating liquid in tanks by submerged horizontal combustion tubes. For use with low pressure gas supplies.*
Size Range: *1", 1¼", 1½", 2" and 2½" outlets.*
Capacity Range: *45-280 cu. ft. of gas per hour.*

Note.—These four burner heads are for high pressure gas or low pressure gas and air blast.

Brass non-blow-off head types: *deal with 5 to 10 cu. ft. of gas per hour.*

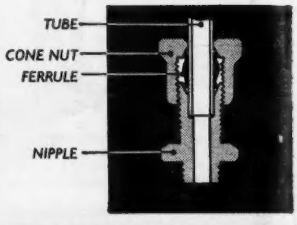
Stainless steel, "F" type head, burner: *deals with 8 cu. ft. of gas per hour.*

Perforated head type burner: *deals with 10 or 15 cu. ft. of gas per hour.*

Type 2 Mixture Controller, *for controlling quality of air/gas mixture irrespective of varying pressures and resistances. Temperature control is varied by manipulation of the air cock only.*
Capacity Range: *from 130 to 1380 cu. ft. of gas per hour according to air pressure (¼ lb. to 1lb.) and size. For low pressure gas systems.*
Air Inlets: *1", 1¼", 1½" and 2" diameters gas thread.*

DID YOU KNOW?

KEITH BLACKMAN have been making compression joints for many years and the present design embodies features developed as a result of this long experience. Notice that the shape of the ferrule is such that the joint is made without unduly stressing the tube.

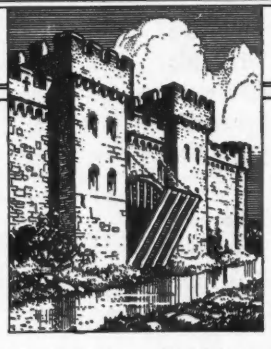


INDUSTRIAL GAS EQUIPMENT

Keith Blackman LIMITED

MILL MEAD ROAD, TOTTENHAM, LONDON, N.17.
Phone: Tottenham 4522 (twelve lines). "Grams: "Keithblac, Norphone, London."
BRANCH OFFICES: AT MANCHESTER, BIRMINGHAM, LEEDS, GLASGOW, NEWCASTLE-ON-TYNE, PENARTH near CARDIFF, AND BELFAST

510/3/GJ



PROTECTION

GAUNTLET

GAUNTLET

WEATHER TESTED PAINTS

ARCHD H. HAMILTON & CO. LTD
27-37 BARDOWIE STREET POSSILPARK GLASGOW.N

Gas Cooker Laboratory Experts

insist

on having genuine

CHROME GRILL FRETS

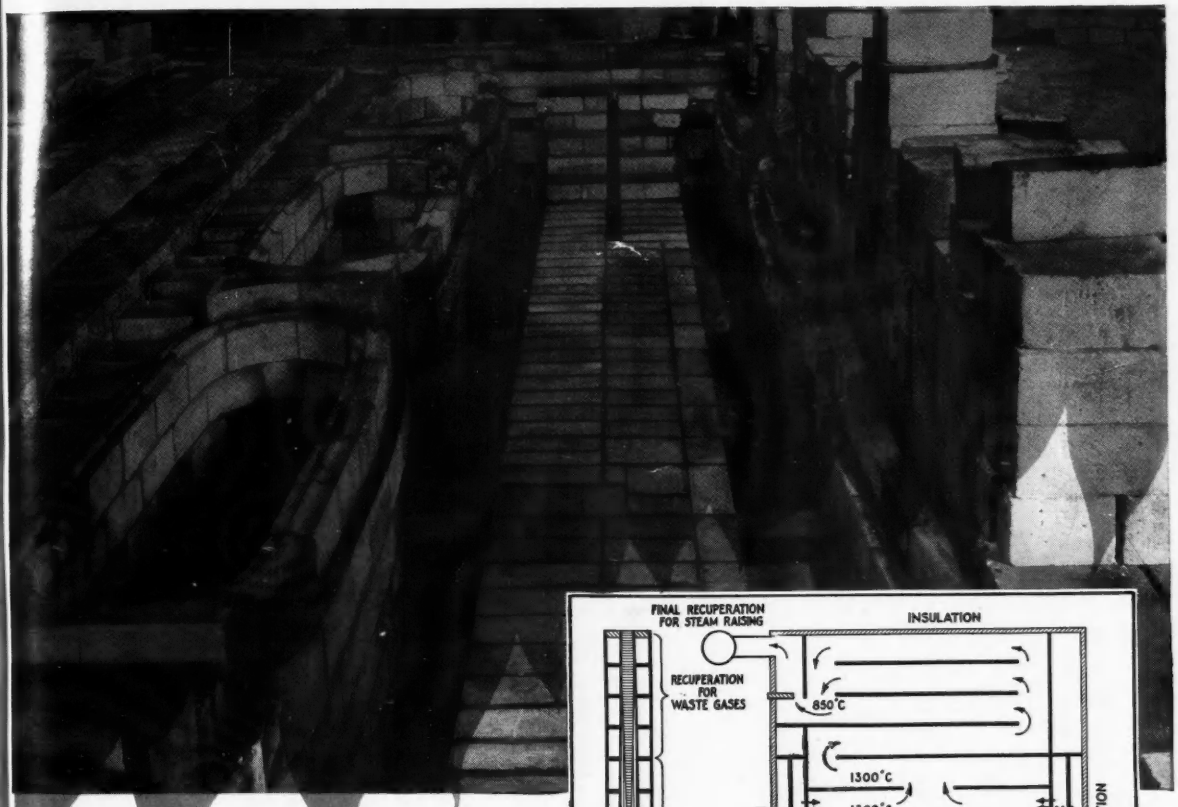
Available for all types of Gas Cookers

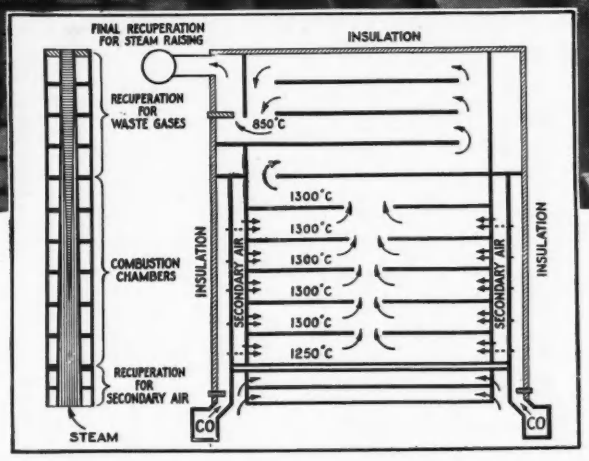
H. B. DREW LTD.
BIDEFORD AVENUE, PERIVALE,
GREENFORD, MIDDLESEX
TELEPHONE : : PERIVALE 3238

Printed by STRAKER BROTHERS LTD., E.C.2, for WALTER KING, LIMITED, 11, BOLT COURT, FLEET STREET, LONDON, E.C.4. Wednesday, November 19, 1952

"Balanced Heating"

MEANS ECONOMICAL GAS—MAKING





Great reductions in the amount of fuel required for the carbonization process have been recorded in the "Balanced Heated" settings of the Glover-West continuous vertical system.

This is due to two main factors. The retorts are heated by *primary* combustion of producer gas which enters the combustion chambers at *both* sides of the setting. Even heating of the retorts ensures maximum utilization of heat and eliminates high local temperatures and fuel wastage.

In addition, improved control of individual combustion chamber temperatures ensures maximum gas production from all coals.

* *Illustration shows a "Balanced Heated" setting under construction.*

West's Gas IMPROVEMENT CO. LTD.

ALBION IRONWORKS · MILES PLATTING · MANCHESTER 10

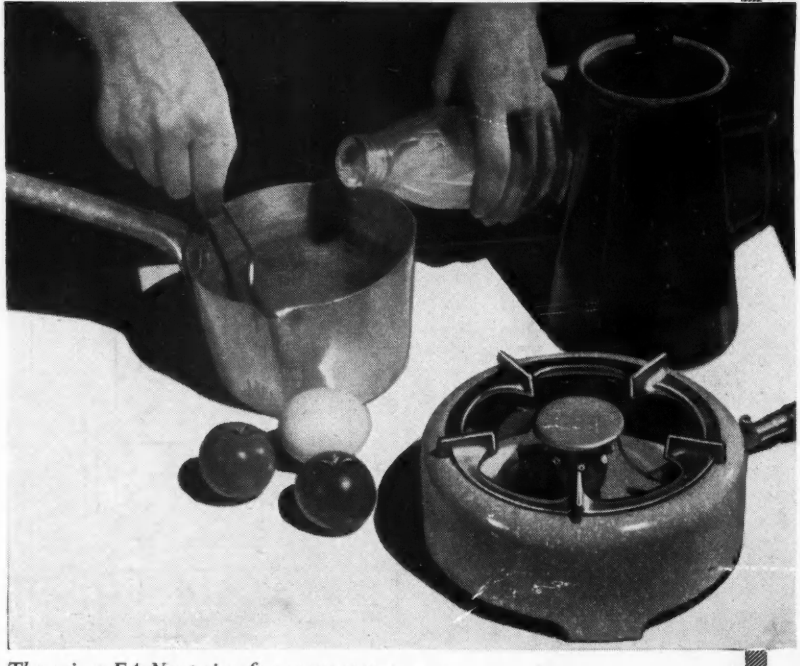
Telephone: COLlyhurst 2961. Telegrams: Stoker, Manchester.

London Office: Columbia House, Aldwych, W.C.2. Phone: HOLborn 4108-9 Grams: Wesgasco, Estrand.

A display hint for FA·NEAT HOTPLATES

These handsome FA-Neat gas hotplates can be most effectively displayed in shop or showroom. A display incorporating, say, a small saucepan, a frying pan and some items of food can be easily arranged on a small table, indicating the handiness of the appliance. Coloured Compoflex gas tubing will add to the smartness of the display.

A cut-out showcard is available; it sets out the principal selling points of the FA-Neat rings.



There is a FA-Neat ring for every purpose:—

FA/1 *A circular single-burner hotplate, finished in cream or mottled grey vitreous enamel.*

FA/2 *A double-burner hotplate, the two burners being controlled by separate taps. Finished mottled grey or cream.*

FA/4 *A square hotplate. These units can be added together using a simple coupling to make two, three or four unit hotplates, each with its own taps. Finished in grey mottled vitreous enamel. This model is particularly suitable for restaurants, canteens, clubs and small hotels.*

NEAT

However low the gas is turned it will not light back or go out.

*

Burners are extremely efficient, giving perfect combustion

*

The burner is silent; there is no hiss, whatever the setting of the tap

*

Robust construction and vitreous enamel finish mean long life

*

Removable pan supports for easy cleaning

ASCOT

ASCOT GAS WATER HEATERS LTD · 43 PARK STREET · LONDON · W1